

1. Programme Details

Host School : Faculty of Pharmacy

Award Titles : BSc Pharmacy

Mode of Study : Full time

2. Supporting statement

The main aim of the pharmacy programme at MSA is to graduate well-educated pharmacists who are able to fulfill their professional duties competently in response to the needs of the local job market. It is tailored to comply with the requirements of the Committee Sector for Pharmacy Education (CSPE) and the Egyptian Supreme Council of Universities (ESCU).

3. Introduction

3.1. Introduction to MSA University

October University for Modern Sciences and Arts (MSA) was established under Presidential Decree No. 244 in 1996 to introduce state of the art technologies and concepts in all disciplines.

Over an area of 50 feddans in the 6th October City, the MSA campus has been built on only 17% of the total area. Highest technological standards in every aspect of the educational process have been followed, aiming at maximum comfort and flexibility for a student body from over 30 nationalities.

The neo-classical look of the campus with its state-of-the-art facilities strongly contributes to its unique standing as an institution of educational excellence. The very careful consideration of spacious and highly advanced labs equipped according to the worldwide specifications standards, the e-libraries, the highly equipped classrooms and lecture halls, the buildings of students' facilities, the Roman amphitheater, and the spacious green areas, enhance the atmosphere of comfort and discipline and inspire an overall feeling of integrity and loyalty to this great accomplishment.

MSA was a pioneer in Egypt to validate its programme with British Universities in 2002. It is the first University granting its graduates a dual-origin bachelor degree; namely a British degree from Bedfordshire or Greenwich Universities, and another Egyptian degree which is accredited by the Egyptian Supreme Council of Universities. MSA University graduates enjoy the privilege of attaining scholarships and have the chance to pursue their M.Sc. and Ph.D. studies in the United Kingdom.

3.2. The Faculty of Pharmacy at MSA

The Faculty of Pharmacy seeks to offer a pharmaceutical sciences programme that is recognized and respected in Egypt, Middle East, and internationally since its approval from the Supreme Council of Universities in 2004. The Faculty of Pharmacy's vision aspires to attain national accreditation and regional and international recognition.

Vision:

The faculty aspires to attain academic and research excellence, and to maintain wide-reaching recognition. It also strives to graduate pioneer pharmacists capable of competing in local, regional and international markets, and to participate in pharmacy professional development and community service.

Mission:

Faculty of pharmacy, October University for Modern Sciences and Arts is committed to offering a state-of-the-art educational programme with British partnership to graduate a competent pharmacist capable of providing high quality services in the field of health care. Also, the Faculty is involved in scientific research and community service for the development of the environment

3.3. Programme aims

This programme aims to:

1. Prepare future pharmacists who are able to command a profound knowledge and understanding of medicines and the aptitude to apply such knowledge to health care, either by direct instructions or by properly informing and effectively influencing the decisions and actions of other health care professionals.
2. Develop practical skills of the students to practice pharmacy in different fields including hospitals, pharmacies, pharmaceutical industry, governmental organizations and academia.
3. Provide knowledge about the substances used in medicinal sources, design, and manufacture of medicines, the action and uses of medicines, other agents, legal framework, regulatory structure, ethics and health care provision.

Graduates Attributes

The programme is aimed at developing the MSA graduate attributes, as well as the Greenwich graduate attributes. This is reflected in its learning outcomes and will be embedded in its specific discipline.

1. Scholarship and Autonomy

The MSA University is committed to developing graduates who:

- a. Think creatively, independently, analytically and are interested in new areas of investigation.
- b. Understand their discipline or their profession practice.

c. Appreciate discipline and forms of professional practice beyond their own and draw connections between them.

d. Intellectually curious, responsive to challenges, and demonstrate initiatives and resilience.

There are several courses that aid the students in developing independence. For instance, the Research Methodology (RS 402) course supplies him/her with the necessary practical skills in gathering and the utilization of information. In addition, the Ethics and safety course (RS 302) provides the students with the knowledge regarding the different codes of ethics. In addition, the different clinical courses; Clinical Pharmacokinetics (PL 402), Clinical Pharmacy and Drug Information (PL 504), Pharmacotherapy of Diseases (PL 505) and Therapeutics (PL 503) as well as the Pharmacy Practice course (PL 403) provided by the programme familiarize the student with the techniques and information required to optimize the use of medication in the treatment of disease and the management of patients as well as the dispensing of prescriptions and Over The Counter (OTC) medication. This gives the MSA pharmacy graduates a well-balanced wide understanding of their discipline and the skills required to excel independently in their professional practice.

Furthermore, students are expected to undertake a graduation project during their final year of study which enables the students to think creatively to solve diverse and unexpected problems, to critically analyze different information and results and to respond to the challenges that arise during their work.

2. Creativity and Enterprise

MSA University is committed to encouraging its students to:

- a. Recognize and create opportunities and respond effectively to unexpected situations.
- b. Generate new ideas and develop creative solutions.
- c. Communicate clearly and effectively, in a range of forms with different audiences.
- d. Make use of new technologies.
- e. Seize and shape opportunities open to them after leaving the University.

Effective communication skills are enhanced gradually through the different assignments carried out by the students in the different courses, where they are expected to communicate their ideas and the information gathered by means of a variety of techniques, such as oral presentations, posters ... etc.

Creativity and the ability to construct new solutions and ideas is encouraged in this programme through two courses; Drug Delivery Systems (PT 512) and Drug Design (PC 532), which oblige the students to think creatively and to come up with innovative solutions and ideas for the different problems faced in the design and the delivery of medicinal compounds.

Students are expected to undertake 300 hours of training before graduation; this can be done in a variety

of fields such as community or hospital pharmacies and industrial facilities. This exposes the students to the various career opportunities in which they can participate in after leaving the University. In addition, the University has a Career Placement Centre (CPC) which provides a wide range of activities related to job and career opportunities, such as recruitment, training and internships. The CPC also provides regular feedback on the skills required in the job market, so these can be enhanced by the training sessions and seminars provided by the University. This provides the students with the confidence, drive and knowledge to create and shape new opportunities and career options for themselves after leaving the University.

Moreover, MSA University encourages students to attend and participate in national and international conferences, workshops and seminars related to different fields of their study, thus exposing and allowing them to appreciate and be aware of new technologies in the field.

Furthermore, the programme helps the student to develop the ability for lifelong learning; this allows the students to be always up to date with the new techniques in their field and also confers them with the expertise to respond to unexpected situations that may arise during and after their study in the University.

3. Cross-cultural and International Awareness

The MSA is committed to produce graduates who:

- a. Engage effectively in groups whose members come from different backgrounds
- b. Appreciate the importance of behaving sustainably
- c. Move fluently between different social, cultural and political contexts
- d. Value the ability to communicate in more than one language.

The pharmacy programme at MSA provides an opportunity for a joint summer elective abroad course, Advanced Drug Delivery (PT 513) where the theoretical part of the course material is delivered in the MSA campus, while the practical part is delivered in the labs of the University of Greenwich. This offers students the chance to experience and familiarize themselves with the diverse culture, the different communities and the different protocols of the laboratories. Therefore, providing the students with a chance to have culture awareness and the ability to deal with different issues in an international setting.

MSA encourages and facilitates the attendance and participation in international conferences, workshops and seminars, as well as the participation in competitions. This allows the students to interact with other participants from a diverse social, cultural and scientific background and consequently, becoming skilled at efficiently engaging and communicating with a widely diverse body of people.

In addition, the students attending the programme are of a diverse cultural and social background and often these students have to participate in a variety of group activities, such as lab work, assignments ...

etc. Therefore, the students are taught to effectively communicate and work with individuals from a variety of backgrounds. The majority of MSA students are multilingual and thus the students are exposed to a variety of languages and thus appreciate the value of communicating in more than one language.

3.4. Programme Specification: BSc Pharmacy

1. **Awarding institution:** October University for Modern Sciences and Arts (MSA).
2. **Teaching institution:** Faculty of Pharmacy, MSA.
3. **Programme accredited by:** ESCU and CSPU.
4. **Final Qualification:** BSc Pharmaceutical Sciences.
5. **Reference Points for designing the programme:** National Academic Reference Standards (NARS)

The programme provides opportunities for students to achieve the following outcomes:

Knowledge and understanding:

Students are expected to show considerable understanding of:

- 1- Principles of basic, pharmaceutical, medical, microbiological, social, behavioral, management, health and environmental sciences as well as pharmacy practice.
- 2- Physico-chemical properties of various substances used in preparation of medicines and the properties of different pharmaceutical dosage forms.
- 3- Different analytical techniques, using good laboratory practice (GLP) guidelines and validation procedures.
- 4- Theories of isolation, synthesis, purification, identification and standardization methods of chemical and pharmaceutical compounds.
- 5- Pharmacodynamics of pharmaceutical compounds and the structure-activity relationship of groups as well as the fundamentals of drug design, development and targeting.
- 6- Principles of pharmaceutical drug formulations, characterization and delivery system.
- 7- Principles of various techniques and instruments of different pharmaceutical industrial processes including sampling, manufacturing, packaging, labeling, storage and distribution.
- 8- Basics of pharmacokinetics, pharmacodynamics, biopharmaceutics and applying information to individualize drug therapy.
- 9- Basics of drug monitoring and bioequivalence studies of different dosage forms.
- 10- Principles of compounding sterile products, including I.V. admixtures, total parenteral nutrition (TPN) and ophthalmics in hospital pharmacies.

- 11- Principles of public health issues and epidemiology in addition to sources of contamination for pharmaceutical products and methods of prevention as well as the concepts of sterilization and disinfection.
- 12- Principles of body function in health and diseases states; as well as the etiology, epidemiology, laboratory diagnosis, clinical features of different diseases and their pharmacotherapeutic approaches.
- 13- Role of genomics and biotechnology in the discovery of new remedies.
- 14- Pharmacological properties of drugs and natural products including chemistry, nomenclature, mechanisms of action, therapeutic uses, dosage, contraindication, adverse drug reactions, and drug interactions.
- 15- Principles of therapeutic, pharmacovigilance and the rational use of drugs.
- 16- Basics of complementary and alternative medicine.
- 17- Toxicological characteristics of xenobiotics including origin, identification, symptoms and control measures.
- 18- Basics of mathematics, statistical analysis and pharmaceutical calculations.
- 19- Principles of sales, marketing, business administration, accounting and management including financial and human resources.
- 20- Principles of drug information, drug promotion, accounting and pharmacoeconomics.
- 21- Documentation and filing of pharmaceutical drug products.
- 22- Pharmaceutical ethics and legislation and laws of pharmacy practice.

Intellectual skills:

Students will be able to:

- 1- Compound different pharmaceutical drug delivery systems and dosage forms based on gained knowledge.
- 2- Implement GLP, GCP and GPMP guidelines in pharmacy quality management.
- 3- Select appropriate tools or analytical methods for the assay and quality control of raw materials and pharmaceutical products for microbiological and chemical QC.
- 4- Determine and access different types of incompatibilities encountered during compounding and dispensing drugs.
- 5- Design appropriate methods for isolation using different chromatographic methods, synthesis, purification and identification of various chemicals and pharmaceutical compounds.
- 6- Adopt computer-aided facilities and bioinformatics databases in drug design.

- 7- Apply pharmacokinetics and reaction kinetics to detect the ADME of pharmaceutical products and determine their bioequivalence.
- 8- Apply different principles to develop various biopharmaceuticals.
- 9- Plan a systematic approach for laboratory diagnosis of common infectious conditions.
- 10- Appraise the pharmacotherapeutic principles in the proper selection and use of drugs in various diseases.
- 11- Adjust dosage and dose regimen of medication based on pharmacokinetic principles.
- 12- Assess possible drug interactions, adverse drug reactions, pharmacovigilance and other drug-related problems, as essential issues in implementing pharmaceutical care.
- 13- Promote cost/effective pharmacotherapy by applying principles of drug information and pharmacoeconomics.
- 14- Interpret experimental data and published literatures, based on relevant chemical, pharmaceutical, statistical principles.
- 15- Evaluate evidence-based information needed in pharmacy practice decisions.

Practical skills:

Student will be able to do the following:

- 1- Practice the proper use of different pharmaceutical terms, abbreviations and symbols.
- 2- Handle chemicals and dispose hazardous solvents in laboratories using safety measures.
- 3- Acquire the skills of formulating, charactering, dispensing, labeling, storing and distributing medicines in a safe and effective way.
- 4- Apply appropriate methods for Extraction, isolation, synthesis Purification, identification and standardization of chemical substances and active constituents of different drug categories.
- 5- Select the appropriate medication, non-medication and/or radio-therapy for a given disease based on its etiology, pathophysiology, severity, patient medical history, possible interactions and age-related factors.
- 6- Distinguish between different types of microorganisms, monitor and control microbial growth and carry out laboratory tests for identification of infectious and non-infectious diseases.
- 7- Investigate toxicity profiles of different xenobiotics and test for poisons in biological samples.
- 8- Practice the application of different designs for operating pharmaceutical equipment and instruments.
- 9- Maintain public awareness on rational use of drugs, including antimicrobials and social health hazards of drug abuse and misuse.

- 10- Counsel the patients and other health care professions about the proper and safe use of medicines from different sources and possible drug interactions.
- 11- Plan treatment guidelines and pharmaceutical care for the different health problems.
- 12- Conduct experimental and research studies and present, analyze and interpret the results.
- 13- Employ principles of documentation and filling of pharmaceutical drug products.

Transferable/key skills:

Students will be able to do the following:

- 1- Demonstrate oral and written communication skills.
- 2- Search the resources for information, data acquisition, collation and interpretation.
- 3- Work both independently and in collaboration with others as a member in a team.
- 4- Use numeracy calculations, statistical methods as well as information technology tools in different fields of pharmacy.
- 5- Develop self- motivation for continuous education and self-managed learning.
- 6- Adopt an ethical, legal and safe attitude in professional practice.
- 7- Acquire sales, financial and market management skills.
- 8- Work effectively in a creative way within pre-determined time frame.
- 9- Develop comprehensive writing and presentation skills.
- 10- Practice critical thinking, problem solving and decision making abilities in a variety of theoretical and practical situations.



Faculty of Pharmacy Bylaw





Faculty of Pharmacy Bylaw



3.5. Access policy

- MSA follows the regulations and requirements of the Egyptian Supreme Council of Universities and the Egyptian Admission Office for Students Recruitment, which are subject to changes on a yearly basis.
- Prospective students have to pass the MSA English placement test before enrolment.
- For transfer students (from either a different faculty or different University), an Equivalence Committee, comprising two faculty members and the programme leader is responsible for reviewing and comparing transferable course descriptions, and deciding which courses are to be considered equivalent to cohort courses delivered in the Faculty, the committee's report is then raised to the University president and the admission office.

Minimum Entry Requirements

MSA has to follow the regulations and requirements of the Egyptian Supreme Council and the Egyptian Admission Office for Students Recruitment, which are subjected to changes on a yearly basis. However, the students have to pass the English placement test that is required by MSA University before getting enrolled.

	Thanaweya Amma (Egyptian secondary education certificate)	I.G.C.S.E	American Diploma
Minimum Requirement	As per national standards	Eight "O" levels, Including the required subjects.	SAT (1) 1200, eight subjects, including the required subjects.
Subjects Required	Science section	English (Language or Literature), Math, Biology, Chemistry and Physics.	English, Math, Biology, Chemistry and Physics.

Equivalence Committee

An Equivalence Committee, comprising two Faculty members in addition to the programme leader has been established. The committee is responsible for reviewing the transferable course descriptions and takes decisions regarding students transferring from other universities to MSA and reports to the university president and the admission office.

4. Programme Structure

4.1. The overall programme structure

Programme structure and requirements, levels, courses, credits and awards:

- Number of credits: minimum of 180 credit hours.
- Levels: 1,2,3,4 and 5
- Award: BSc Pharmacy

Summer training

Students commence training after the end of the 3rd year. The aim of this practical training is to get the student acquainted with the role of pharmacist in community, hospital and/or industrial pharmacy. The faculty and the University mutually share in finding acceptable training opportunities (300 hours) in one or more of the following settings and the students are fully supervised by the training committee members all through their training period:

1. Community pharmacy: To gain practical experience in dispensing prescription, counselling patients and responding to their symptoms, health promotion, and medication review. Students will get hands-on experience in providing pharmaceutical services to nursing and residential homes and will know how to reduce the harm that drug misuse inflicts on society. This training will open an opportunity to the student to practice giving advice to patients and other health care professionals.
2. Clinical and Hospital pharmacy: This training will allow students to have a clinical appraisal function, be directly involved with patients, practice of giving advice to other professionals and learn how to develop treatment protocols. The students will also have the chance to counsel and educate patients on the best use of their medicines as well as monitoring the effects of their therapy. Some hospital pharmacies have specialised medicine preparation facilities such as complex cancer treatments. Others have special licenses for the small-scale manufacture of medicines which are not commercially available. The trainee will have the opportunity to share experience and to practice in part this unique feature.
3. Pharmaceutical industries: The students will be able to gain experience in formulation of new products, planning and optimization of drug development strategies, advising on regulatory issues, marketing and managing scale-up and large scale production of medicines.

Diversity and equality issues

MSA University has an equal opportunity policy and all its programmes are offered to all eligible students without discrimination against race, sex, religion or disability. Moreover, the University strives to attract an extensively diverse body of students to enhance the student experience and support inter-cultural interactions.

The programme aims to strengthen this policy through a variety of methods; firstly, students with declared disabilities are offered access to required aids and materials during lectures, tutorials, laboratories and examinations. These include but are not limited to; easily accessible seating, the use of acceptable colour schemes, the availability of printed documents (*e.g.* exams, course specifications) in a variety of formats ... *etc.* In addition, MSA provides when necessary special tutorial in academic reading and writing, and if required one to one tutorial may also be offered. Moreover, special health needs for students, such as pregnancy or allergies are taken into account during any time in the laboratories (*e.g.* research projects or experiments) to avoid any unnecessary difficulties to their health.

The course content was designed to accommodate the diverse body of students entering the course; this is executed by the incorporation English language in early years for students graduating high school with national Arabic Thanawya Amma in addition to the incorporation of international content into the course material. This is demonstrated in the inclusion of various international ethics and safety codes in the ethics and safety course, as well as the incorporation of the different status of drugs and the different treatment guidelines in various international markets. Furthermore, in many circumstances the students are required to work in teams, during projects and group assignments for instance, and given that their diverse nature with regards to ethnicity or cultural background, the students are taught to accommodate their differences with sensitivity and understanding.

1. Teaching, learning and assessment

The programme is delivered through the use of:

- Lectures (including visual aids, audio and audio-visual materials): which are mainly delivered as presentations and are aimed at providing knowledge and guidance in learning. External visiting lecturers are encouraged to demonstrate the practical applications of the theoretical studies to students.

- Group Tutorials: which are linked to lecture topics and depend directly on taught and independently acquired information from primary and secondary information sources.
- One to one tutorials: for advice and feedback on assignments, supervision of final year projects and personal tutoring in case of special needs
- Laboratory Classes: which are aimed at the developing of practical skills associated with the subject matter.
- Seminars: an interactive way of teaching, they include a variety of presentations, discussion groups, simulations and role-playing. They emphasize and demonstrate the ideas gained and concepts comprehended. They also develop communication and problem solving skills.
- Guided independent study: this includes research and assignments associated with lectures, laboratory classes and seminars. It is based on the library and electronic references given by the lecturers or acquired independently.
- Academic counseling: it informs students of the rationale, content, aims and objectives of the programme as a whole through open discussion of timetables and activities especially in the early stages of the course.
- Field trips: The programme has several links with the community and drug industries. Visits to pharmaceutical companies under supervision of staff members, are regularly arranged to which the students are encouraged to join.
- External links: The University invites distinguished speakers in the field of pharmacy and drug industry as well as environmental and health provisions.

To successfully complete the programme, the student is expected to complete a total of **180 credit hours**, which are divided into 14 credit hours of University requirements, which include English Language, Computer Science and Mathematics courses, 21 credit hours of collateral requirements, which include Behavioral Sciences, Management Sciences and Research and Seminar, and finally 145 credit hours of core requirements which are courses that cover aspects like: Pharmaceutical Chemistry, Pharmacognosy, Clinical Pharmacy, Microbiology, Pharmaceutics, Biochemistry, and Pharmacology.

The contact hours of each course are dependent on its credits hours, for instance courses with 2 credit hours encompass 2 contact hours of lectures every week, while 3 credit hour courses encompass 4 contact hours every week (2 hours of lectures and 2 hours of laboratories/ tutorials). Similarly, courses with 4

credit hours encompass a 5 contact hours every week (3 hours of lectures and 2 hours of laboratories/ tutorials).

Students are expected to undertake a commitment for personal study, this usually involves about 25% of the contact hours. Therefore, for a 3 credit course the student is expected to undertake about 1 independent personal study hour per week, while for 4 credit course the student is expected to undertake about 1.25 hours of independent personal study per week.

Assessment strategy

Variable methods of formative and summative assessments are applied regularly to measure the attainment of the programme ILOs.

Summative assessments: are those applied for the courses according to the course level and are approved by the Egyptian Supreme Council of Universities.

Intended Learning Outcomes	Assessment Methods
A. Knowledge and Understanding	Written exams (Quizzes, midterm and final exams) Assignments Continuous evaluation Research Projects
B. Intellectual Skills	Written exams (Quizzes, midterm and final exams) Assignments Continuous evaluation Research Projects Case studies Problem solving
C. Practical Skills	Practical Exams
D. General and transferable skills	A variety of assessment methods are used to assess transferable key skills. These include problem solving assignments and peer-reviewed oral presentations. These assessments are contextualised in A, B and C above

Formative assessments: are those used regularly in lectures and labs to measure the intended LOs conquered by the students by the end of each lecture. Different methods are applied including quizzes, online activities (Socrative & Kahoot) and direct Q&A technique. Evaluations from formative assessments are not considered in the formal summative methods.

The assessment methods applied changes as the student gains confidence and competence in higher levels. Consequently, at levels 1, 2 and 3 the students will be extensively assessed through written examination

while there is a greater weighing on individual planning and reporting of project work at level 4 and 5 to assess the acquisition and application of student's knowledge.

The programmes grading follows the following criteria;

GPA	Marks	Grade
4	≥ 90 %	A
3.67	85 - < 90 %	A ⁻
3.33	80 - < 85 %	B ⁺
3	75 - < 80 %	B
2.67	70 - < 75 %	B ⁻
2.33	65 - < 70 %	C ⁺
2	60 - < 75 %	C
0	< 60 %	F (Fail)

The Calendar of Assessment

Formative assessments:	Weekly
Summative assessments:	
1. Mid-term written exam	Week 7
2. Final written exam	Week 14
3. Oral exam	Week 14
4. Quizzes	Weeks 4 and 10
5. Assignments	Due variable
6. Research project	Along the semester

The period of final assessment includes a deadline for submitting all work to be assessed as well as concluding all the examinations. At the end of each period of assessment, the MSA University Assessment Board meets to approve the results of all modules and award qualifications.

The academic load is the number of registered credits per student each semester and credits acquired by students are based on the number of modules passed from the academic load registered.

GPA calculation

$$\text{Semester GPA} = \frac{\sum(\text{number of credit hours of each module in the current semester load} * \text{corresponding GP})}{\text{Semester total credits in the current semester load}^2}$$

The number of credits used to calculate the Cumulative GPA is the number of credits registered by the student up to this date.

Cumulative GPA for MSA degree is based on the total credits of all modules

$$\text{Cumulative GPA} = \frac{\sum(\text{number of credit hours of each module registered up to this date} * \text{corresponding GP})}{\text{Total credits registered up to this date}}$$

Students cannot graduate with a cumulative GPA less than C which is 2.

BSc Degree: National Univ. Grade	MSA Letter Grade	MSA GPA	UK Honours Level
Excellent	A, A-	≥ 3.67	1st Class
Very Good	B+, B	≥ 3.0	2.1
Good	B-, C+	≥ 2.33	2.2
Satisfactory	C	≥ 2.0	3rd Class

Taking into consideration the minimum grade requirements mentioned above, cumulative GPA for the equivalent Greenwich Award will be based on the total credits of 300 and 400 modules.

Student progression

The progression of Pharmacy students at MSA is based on pre-requisite system. The student cannot progress to the next course without having passed its pre-requisite course. Courses of the first semester have no pre-requisites except the English course ENG 101, that requires passing the MSA English placement exam.

Year progression is based on students' achieved credits which can be mapped into level progression as follows:

MSA Achieved Credits	MSA Year	UoG Level
≤ 36	1	Foundation
37- 74	2	
75- 110	3	1
111- 147	4	2
148- 180	5	3

Graduation

Students shall automatically receive the award of MSA University and qualify for upon completion of the requisite number of credits with a CGPA equivalent to C or above at the end of the semester during which the total was achieved.

Graduation Ceremonies are usually held every year in September for Fall, Spring and Summer Semesters graduates.

Failing a Module

Students must meet the deadline for submission of all coursework in accordance with the requirements of MSA University and module staff.

A student is deemed to have failed in the following cases:

- Students who fail to attend 75% of all lectures and tutorials (F1).
- Students who fail to attend the final exam (F2).
- Students who fail to achieve 30% of the marks in the final exam in the (F3).

Incomplete Modules

If a student fails to attend the final exam due to any emergency or extenuating circumstance, and the University President approves the nonattendance, then an incomplete grade will be agreed. Course work grades are transferred to students who are given an (I) grade. Subsequently, the student will be allowed to sit for the final exam of this module at the next opportunity.

Progression and Repeat Policy

Students may not repeat any module they have passed unless it is a requirement of an accreditation board or is crucial to the student's academic progression. Students who fail to maintain a minimum cumulative GPA of 2 will be put under probation and will be allowed to repeat Modules with a grade of F. The grade used in the final GPA is the final grade achieved by the student

Condoned Failures

Condoning regulation for the MSA Faculty of Pharmacy applies only if the student has passed the final exam:

- ENG90 is not condoned.
- Cases of graduating students are given extra attention.

- For students who fail courses; max 5 marks can be distributed among failed courses if they passed in the final exam.
- Course with the highest mark will be selected for condonement first.
- For failed courses with equal marks; less important course will be condoned first.

Failures can only be condoned by the University Assessment Board. Students are not allowed to question the grant/refusal to grant condonement.

Grade appeals

Staff correct the answer sheets with coded numbers in the final examinations so that the identity of the student remains completely anonymous thus insuring that the assessment is truly objective reflecting the students' true academic standard. Each answer sheet is marked by two examiners.

Despite this accurate grading procedure, students are allowed to appeal against their final grade. Students need to fill a Grade Appeal available from the Faculty Registrar. The Faculty Registrar sends all grade appeals to the Examination Unit. The Examination Unit checks the student's total grade from the records available and also checks that there is no indication that the examiner has not missed any questions during the grading of the answer sheet. Any cases requiring the alteration of student's grade are reported by the Examination Unit to the Faculty Registrar who notifies the student.

2. Operational management of the programme

2.1. Student registration arrangement

The Registration Period for each semester is announced on MSA Academic Calendar almost two months prior to the academic year. Students must adhere to this period as delaying registration after the commencement of the semester will affect their academic progression and will also be counted as absence. Registration must be completed online, no manual schedules are allowed.

During the Registration Period students are offered academic advice via their academic advisors. They are also provided with a detailed schedule prior to the start of each academic semester. If necessary, students can obtain a replacement copy from the Faculty Student Affairs Department. Students are eligible to register the full load of the semester as long as he/she is not under probation.

CGPA	Permitted registration load
Less than 1.18	9 – 11 credit hours
1.19 – 1.60	12 – 13 credit hours
1.61 – 1.99	14 – 15 credit hours
2 and above	16-19 credit hours

After completing the Advising and Registration process successfully, students receive their book store receipt from their respective faculties and are advised to visit MSA Book Store to receive their books. All English and Math courses are automatically registered in the schedule and the student is not allowed to bypass any of these courses.

Project Part 1 registration requires 136 completed credit hours and a prerequisite RS 402 course. Project Part 1 registration opens directly after the previous semester results' announcement. You will be assigned a project's department according to the order of choices you have submitted and your CGPA in comparison to other candidates, which cannot be changed. If you missed the deadline for submitting your department selection, you will be automatically directed to any department according to the vacancies.

During the summer semester, students are allowed to register for a maximum of seven credit hours for old curriculum students and six credit hours for new curriculum with courses which belong to different semesters. No courses can be registered with summer English courses as the English courses' load is spread over four days a week. If this is the student's last semester, he/she is exceptionally allowed to register for nine credit hours.

2.2. Setting Exams and assessments and marking and moderation arrangements

To ensure fairness and clarity of examinations, maintain the quality of the education process and conformity to the Universities regulations, all examination papers are sent to member of the examination review committee for internal approval.

Exam papers of courses studied during the final two years of the programme and elective courses are sent to the Link Tutor at the University of Greenwich; a final check of papers is carried out by the School Director of Learning and Quality and the Head of Department at Greenwich to ensure errors, omissions and other issues have been addressed before sending them to the External Examiner. Examination scripts are blindly marked according to criteria set out in the model answers of which define the expected content

and level of the answers. This includes the degree of description, analysis, criticality and / or other characteristic(s) expected.

All failing exam papers, papers with a score of over 90 % and a minimum sample of 10% of all in-between answer sheets are subjected to second marking, by an internal examiner, with sufficient experience in the course content, other than the course examiner. This is carried out to ensure fair assessment and to establish that the first marking procedure was accurate. First and second marking of exam papers is done independently.

2.3. Programme regulations

Attendance and deprivation policy

Students must attend at least 75% of their lectures, labs and tutorials otherwise, the student will be deprived of attending the final exam and his grade will automatically be denoted as “F (1)”. Late registering students are considered absent in their missed classes, and hold full responsibility of their late registration and are eligible to all deprivation rules. No students are exempted from deprivation. Rules apply to all registered students. Graduating students with approved conflicts from the registration admin must attend at least 50% in the conflict group only.

Official accepted excuses by the Faculty are limited to:

- Medical excuse from the University’s clinic, from an external clinic after approval from the University’s clinic or from a national hospital in severe cases after approval from the University’s clinic within a week after recovery.
- Death of a close relative, limited to a father, mother, brother or sister, given that a death certificate is provided. The excuse is limited to one week after the death.
- National, international, regional events, activities and competitions, and when the MSA University is represented. Only the day(s) of the event or activity will be considered.

The total excuses in the semester for any student will be accepted only for a maximum of 3 lectures or labs per subject. They will not be considered as attendance but will be deducted from percentage calculation. No excuses will be considered longer than a month in fall or spring or one week in a summer; this will only be considered in the acceptance of the course withdrawal, if the student failed to attend the

specified percentage. Excuses will be only accepted within one week after the incident directly. A final deprivation list is handled on the faculty board before entering the final exam. No excuses will be accepted by any means after the announcement of the deprivation list.

Probation Policy

Probation students are students who fail to achieve CGPA 2.0 (equivalent to C or $\geq 60\%$). Students are informed during their first levels on probation that they should exert utmost effort on raising their CGPA to at least 2.0 ($\geq 60\%$) to avoid being dismissed from the University and to be able to graduate. A student on probation for four consecutive semesters or a total of ten inconsecutive semesters the student will be dismissed from the faculty and will not be allowed to reregister in the same faculty again. The number of semesters on probation after which the student is dismissed from the University is determined by the ESCU.

Late Arrival Policy

Late arrivals disrupt the class and interrupt other student's concentration. Students are only allowed into the class during the first five minutes. Otherwise, they miss the class and are recorded as absent.

Late Submission Policy

Students are notified of the deadline for work submission for all pieces of their work at the start of the semester. Failure to meet the deadline results in the deduction of 10% of their mark for each working day.

3. Student support and learning resources

The maximum number of students accepted each year in the programme is set by ESCU.

Faculty of pharmacy, MSA University considers one of its main goals to provide a unique, friendly and pleasant atmosphere for the students. Staff members and students interact together constantly as members of one large family.

The Faculty Registrar and Student Affairs offers advice, help and support to the students, this includes:

- Advice on solving problems and the procedures to be followed.
- Enrolment and fees payment.
- Registration procedure.
- Advice on career placement and training opportunities.
- Disability support and guidance.

- Attendance excuses.
- Receive appeals and complaints.
- Counselling.
- Enrolment/Graduation Certificates.
- Providing advice on any issue that concerns students' welfare other than the above.

Subject Advice and Educational Guidance

Faculty of pharmacy has introduced many methods to provide academic advice and aid to all students through the following channels:

- **Academic Adviser**

Academic advisers are available for students to offer advice and guidance during and after registration of courses.

Generally; students from first level are divided into small groups of at most 25. Each group is led by an academic advisor. S/he is always there for his/her students to offer academic, social and personal advice. Academic advisors' work is monitored by academic leaders. The whole system is established and followed up electronically.

Students under academic probation; failure to earn a minimum grade-point average of 2.0 will automatically place the student under academic probation during the fall or spring semester that follows. During this period, an action plan is set for them under the supervision of the probation committee, besides the assigned academic advisor in order to improve their cumulative GPA. A separate database is created to allow following up of the students. Students under academic probation receive individualized recommendations, professional guidance, and academic intervention to help them take the appropriate steps to enhance academic progress. A new follow up sheet is developed and distributed among the students under academic probation to follow up the students' lectures and laboratories attendance, besides ungraded quizzes to help them to get better marks. They are required to hold weekly meetings with their academic advisors until they clear probation.

Students who are at risk; once the student's cumulative GPA falls between 2-2.3, he/she is placed in an “at risk” zone, where the academic advisor counsels the student and assists him/her to establish a plan of study before falling under academic probation.

High achievers’ students; the faculty continues to boost the number of high achiever students by organizing an event per semester, where the high achievers are recognized.

International Student Support; MSA runs 24 offices in various Countries. The offices are located in Saudi Arabia (3), Kuwait (4), Palestine (6), Jordan (10), Syria (1). MSA established testing centers in both Saudi Arabia and Jordan where the new comers are allowed to sit for the English Placement Exam to facilitate the admissions procedure of the international students. Moreover, MSA has always maintained a healthy and fruitful relationship with cultural attachés in Arab embassies.

We live in a global world, boundaries have vanished and cultures have mixed together. MSA has created open communication channels with Arab and Non-Arab Universities in order create a Model of United nation and Model of Arab League. In addition, The International Day Festival is a popular event held by MSA University.

- **Individual/Group Study**

Teaching assistants are available to offer extra help to students. They work with students either individually or in small groups according to their individual needs.

- **Information for students with Special Needs**

As an educational institution and employer, MSA recognizes the equal rights for all students. Thus, within this context, MSA supports any student with any form of physical disability who would require special tutorial help in academic reading and writing. Students with physical disabilities are taken into consideration not only in respect to examination arrangements but also in attendance and in the marking of coursework and examination papers, provided that the student has reported it at an early stage. Disability that may require consideration and when deemed necessary, MSA offers one to one tutorial help.

MSA is committed to a continuous programme of upgrading its buildings in order to improve accessibility for the disabled by incorporating provisions for wheelchair users. The campus includes ramps, lifts, and toilets for special needs persons.

- **English Language and Learning Support**

MSA is an English Language medium instruction university. Students are required to sit for an English Language Placement Exam during admission. According to the exam result the student is placed in

Intensive English courses that range from the upper intermediate (ENG 90), or Upper intermediate/Advanced (English 101).

Students who need additional help and who have finished all the University language requirements are urged to contact the English Support Unit in the Faculty of Languages to arrange for extra help or to attend the extra group sessions.

Graduating students are advised by their faculties to refer to the English Support Unit for guidance and support for writing their graduation documentation and referencing ethics.

Orientation day

For first year students, an orientation day is arranged to provide necessary information for first year students. Activities during that day include tour through the faculty campus, to inform the students about the different locations of the lecture halls, laboratories and staff rooms. In addition, the students are also introduced to the facilities provided by the University, such as the sport facilities, University physician ... *etc.* Furthermore, the students are also introduced to the protocols and facilities provided by both the MSA University and faculty of pharmacy for academic advice and appeal processes.

Library

The library is built on a space of 1700 m² and it contains about 112 tables, 800 chairs with a capacity of 600-800 users. The library is equipped with central air conditions and sound system. The library has provided two copying machines to copy chapters of books without affecting the library policy concerned with the intellectual property rights of the authors. Also there are computer devices within the library working with high efficiency and connected to the internet and to the printer. These computers are available for both the students and the staff. The library also offers an automated system through which the students and the staff can search for books using the title of the book or the author's name.

The library contains in addition to the references and scientific periodicals; electronic database with 23455 books' titles and thousands of periodicals. The library has provided its index on the internet through the university's own site which is called "OPAC – Online Public Access Catalog". Also there is a department responsible for Multimedia which contains CDs related to some available books in the library.

In addition, the library allows all the users to get free benefits from the international databases which are; "Green File", MEDLINE, eBook Academic Collection, Arab World Research Source, e-Book Clinical Collection, Egyptian Knowledge Bank, EBSCOhost, JSTOR and Greenwich University electronic library.

The library is also characterized by e-indexing; it possesses indexing screen (screen/50 users) for the ease of obtaining the information. In addition, the library contains a lot of educational references and books related to pharmacy in different specialties represented in books, e-books and e-articles which is continuously updated.

All students and staff have their user name and password for accessing all online recourses on campus or from their homes. Furthermore, students in the faculty of pharmacy programme are allowed access to the University of Greenwich Library through partner student right, by means of unique passwords and IDS provided by the University of Greenwich. This provides the students with full access to the University of Greenwich resources which includes variety of electronic journals and databases.

IT facilities and accessibility

The unit offers IT Services to the entire University. It is also responsible for:

1. Maintaining the IT infrastructure in the University.
2. Providing hardware and software packages for the faculty requirements;
3. Maintaining equipment.
4. Equipping all computers with different operating systems platforms, database management systems, programming languages, software development kits, and education software tools to provide suitable training for different fields of specialisation.
5. Providing support to all instructors and students in using the audio-visual aids provided by the University.

In addition, The IT facilities at the University provide the student with access to the MSA Moodle. The Moodle facilitates the communication between the students and their instructor, since students can easily access and download course related material; such as handouts, PowerPoint presentations, previous exams and quizzes ... *etc.* Moreover, in a bid to decrease paper usage and ease the submission of assignments, completed assignments are submitted electronically onto the Moodle system. In addition, important dates and announcements such as assignment deadline, quiz dates and extra hours are posted onto the Moodle, to be available to all students registered in the course.

Staff availability

MSA University operates an open door policy, where students and staff can interact in numerous situations. Staff member contacts and locations are announced during lectures, to enhance the convenience

of communication between students and staff. Moreover, staff members announce regular office hours to students each semester, where they are available in their office for questions and inquire regarding the course material.

Transportation services

For all information regarding MSA Transportation facilities, Students are kindly requested to visit room B114.

4. Programme Management

4.1. Dean

The Dean is responsible for the educational and administrative affairs of the Faculty and representing it on the University Board. The Dean is responsible for the implementation of University Board decisions at Faculty level, the supervision of curriculum development, and the development of the Faculty. The Dean collects and evaluates instructors and students' feedback and through the Faculty Board agrees any actions necessary to address issues arising from feedback. The Dean is responsible for ensuring that students receive appropriate support and guidance to assure that they are able to meet the learning outcomes of their programme.

4.2. Vice Dean

The Vice Dean is responsible for:

- Supervising the preparation of schedules
- Studying the needs for hiring full-time and part-time academic staff members together with the needs for educational and scientific instruments and equipment.
- Caring of student activities.
- Overseeing the implementation of the committees he/she is responsible for.

4.3. Programme leader

The programme leader plays a key role in maintaining the quality and standard of the educational process. The programme leader has the following responsibilities:

- To ensure that the programme is delivered in accordance with the approved learning and teaching strategies.
- To ensure an effective academic advising system.
- To prepare a programme handbook.

- To ensure that the schedules cover the students requirements.
- To ensure that the resources needed for supporting the programme are available in sufficient quantity and quality.
- To ensure that the assessment takes place in accordance with the approved assessment strategy and that the external examiners receive assessment information.
- To lead the process of re-accreditation whenever required and monitor the requirements of any external reference points.
- To lead the process of programme review and update and to report to the dean on the operation of the programme.
- To attend University and Faculty assessment boards.

4.4. Course leader

The course leader is responsible to the programme leader for the organization and management of the programme. His responsibilities include:

- The organization and management of the course.
- The quality of the student experience.
- Current course contents, in collaboration with the teaching team.
- External examiners liaison.
- Advising the programme leader on programme resource issues.
- Library resource issues.
- Discussing the organization and content of the course with the teaching team.
- Engaging in the moderation and evaluation of the course.

4.5. Link tutor

Link Tutor is responsible for ensuring the maintenance of the standards and delivery of the collaborative Programme, and for effective liaison with the key administrators in each Institution. Both Greenwich University Link Tutor and MSA Link Tutor are allocated to the programme of study. They are responsible to Greenwich University for ensuring the maintenance of standards; delivery of the programme and effective liaison between the University and MSA. The responsibilities as included in Guidance in the Quality Assurance Handbook of Greenwich University.

4.6. Programme committee

The role of the programme committee is regularly hold meeting to develop, review and update the contents, design and the delivery of the programme to ensure optimum benefit to the students. This process is influenced by feedback from industry and academic experts, staff and students, the discovery and development of new techniques and methods related to pharmacy education and finally any updates that arise in subject benchmark statements or criteria established by the ESCU. The committee consists of:

- Faculty Dean
- Faculty Vice Dean
- Programme Leader
- Course Leaders
- Faculty Teaching Staff
- Teaching Assistants
- Link Tutors
- Student Representatives
- Library Representative
- IT Representative

5. Student feedback mechanism

Student feedback is obtained through a variety of mechanisms;

5.1.Boards of study

The purpose of the Board of Study is to provide a forum for discussion between students and staff involved in all aspects of the programme.

The board is attended by:

- Chair (Dean)
- Representative from UoG
- Director of Quality Assurance & Audit Unit
- Programme Leaders, Faculty Link Tutor, all Module Leaders (or their representatives) wherever feasible.
- Student representatives (two for each year/major).
- Support services representatives (IT, Admission, HR, PR, Examination Unit, Library, *etc*).

- Secretary (to take the minutes)

Student representatives are responsible for notifying the board with the students concerns, suggestions and complaints. A meeting is held each semester normally in week six to eight as specified in the Quality Assurance Calendar. The dates of the Boards of Studies are published on MSA Website and on MSA Academic Calendar and Quality Assurance Calendar. The agenda must include all major items but further items suggested by the student representatives and members of the committee may be added where appropriate. The minutes should cover all agenda items and include a summary of the main points of discussion and an action/outcomes list. Any actions required include the timescale, the name of the person responsible and when a report back to the Board is expected. They should also include progress on actions from the previous minutes. Within five working days of the meeting a Chairs' Action List will be published and circulated to all those with action points to deal with and to the Quality Assurance and Audit Unit Head. In addition, copies should be put on appropriate student notice boards.

5.2. Course evaluation forms and programme evaluation questionnaire

Course and programme feedback forms are distributed to students and staff throughout the academic year. Students are required to complete the online evaluation (for Module/ instructor/teaching assistant). This is considered an anonymous channel for receiving Student Feedback. The aim of this feedback process is to elicit views on the quality of all the courses taken. Course forms examine each course in detail are distributed to students at the end of each semester. Programme questionnaires invite comments on the programme in general, are distributed at the end of the final year. Both sets of forms are completely anonymous. A report detailing any issues identified, if any and the measures taken to resolve any problems is generated to be discussed during the board of study and when necessary, be reported upon during the annual monitoring process.

Reports of evaluation are sent to the Dean and Heads of Department/Programme Leader for action. In addition, the head of Board of Trustees, President, Vice Presidents and Director of Quality Assurance also receive a copy. The process of the online evaluation usually commences after the midterm exams and is announced on the University Academic calendar and on MSA website.

6. Annual monitoring

The Faculty of Pharmacy at MSA University monitors, on an annual basis, each of the programme's courses to review any minor/major difficulties that might have arisen and to ensure that appropriate actions for improvement are identified. A written action plan by the course leader is generated for each

course to reflect any issues that might arise from the feedback received from the students, and the external examiner if applicable, as well as the statistical data showing the percentages of the different courses' grades, number of withdrawals and incomplete students provided by the exam control unit.

A collective annual report is then generated to evaluate the overall performance of the faculty, every academic year. It evaluates the achievements of the faculty over the past academic year, including the change in the number of enrolled students. It also scrutinizes the module monitoring report and teacher self-assessment forms provided by the staff member, as well as the minutes of the board of study. This results in a proposed action plan to maintain the standard of performance or correct any shortcomings, if any, in the programme. The proposed action plan identifies the person responsible for the action to be taken and whether aid from individuals outside the faculty will be necessary. In addition, it also examines the actions taken regarding the previous year's action plan and whether there are any issues that still remain unresolved.

7. External examining

External examining provides a fundamental mean for maintaining British academic standards and is considered an integral part of the Faculty's Quality Framework. External examiners offer informed, independent and comparative visions of academic standards, assessment processes and good practice. British external examiners visit the Faculty of Pharmacy at MSA twice per each academic year. They are provided with the complete set of marks and a sample of corrected exam papers and assignments where they then review and comment upon the results and the course work. In addition, they are also provided with portfolios for the subjects studied in the final two years of the programme and elective courses, where they are review and comment on the content of the course and the different assessment methods used and provide an independent view on the course standards. Moreover, the British external examiners attend the final oral and poster presentations of the projects students where they are given the chance to provide independent feedback about student work.

In addition to the British external examiners, there are also regular visits from Egyptian external examiners who are given the chance to examine course content and orally examine students and consequently provide independent feedback on the taught material and student academic level and overall subject comprehension.

8. Academic offences regulations

MSA University complies with the Rules and Regulations of the Ministry of Higher Education in Egypt as per decree 49 for the year 1972, as well as the Rules and Regulations of the Private Universities in Egypt as per decree 101 for the year 1992.

8.1. Dismissal from Class

Students dismissed from classes for insubordination or other disciplinary reasons are not to return to class until the Dean of Faculty permits it. MSA Management cooperates with the teaching staff to maintain proper discipline.

8.2. Academic Dishonesty and plagiarism

MSA students are expected to be honest in their academic endeavours. The falsification of the results, cheating on an examination or the allowing others to commit an act of academic dishonesty corrupts the basis of the academic process:

Academic dishonesty includes -but is not limited to- the following cases:

8.2.1. Plagiarism is the inclusion of someone else's words, ideas or data as one's own work. By placing their names on work submitted for credit, the students certify the originality of all work not otherwise identified by appropriate acknowledgements. Plagiarism covers unpublished as well as published sources. Plagiarism includes -but not limited to- the following examples:

- Quoting another person's actual words, complete sentences or paragraphs, or entire piece of written work without acknowledgement of the source.
- Using another person's ideas, opinions, or theory even if it is completely paraphrased in one's own words, without acknowledgement of the source.
- Borrowing facts, statistics or other illustrative materials that are not clearly common knowledge without acknowledgement of the source.
- Copying another student's essay test answers.
- Copying, or allowing another student to copy, a computer file that contains another student's assignment, and submitting it, in part or in its entirety, as one's own
- Working together on an assignment, sharing the computer files and programmes involved, and then submitting individual copies of the assignment as one's own individual work.

Students have to make sure that written material is acknowledged through the use of quotation marks, references and bibliographies. When in doubt about rules concerning plagiarism, students are urged to

consult individual Faculty members, academic departments, or recognized handbooks in their field.

Depending on the severity of the plagiarism or the offence being committed, the marker may take one of the following actions:

i. In case of first offence, (not deliberate or intended, one which has arisen inadvertently through mistake or ignorance), student may receive one of the following penalties as determined by the Module Leader or Programme leader.

- Students are reminded of the seriousness of their act and is given a verbal warning
- Students are reminded of the seriousness of their act and are asked to sign a Plagiarism Warning Form (A written warning).
- Redo the same assessment or a new assessment within a set deadline. The new mark shall not exceed mark awarded for the offended work, if any.
- Redo the same assessment or a new assessment and the new mark shall not exceed the pass mark.
- Exclude the plagiarized part of the assessment and mark the work accordingly.
- Award a zero grade to the assessment under investigation.

ii. In case of second offence, the issue is escalated to the programme leader/Dean. The penalty may reach failing the assignment grade/Course work of the module where the act has been attempted.

iii. In case of repeated act, the issue is escalated to the Respective Dean who directly reports to the University President for final decision. The penalty in this case may reach failing the module where this offence was committed or more than one module.

iv. In severe cases, the issue is escalated to the University President and the penalty may reach dismissal from the University for one semester or more based on the circumstances of the case.

8.2.2. Fabrication is the use of invented information or the falsification of research or other findings. Fabrication includes -but not limited to- the following examples:

- Citation of information not taken from the source indicated. This may include the incorrect documentation of secondary source materials.
- Listing sources in a bibliography that is not directly used in the academic exercise.
- Submission in a paper, lab report or other academic exercise of falsified, invented, or fictitious data or evidence, or deliberate and knowing concealment or distortion of the true nature, origin or function of such data or evidence.
- Submitting as one's own any academic exercises prepared totally or in part by another.

8.2.3. Cheating is an act or an attempted act of deception by which a student seeks to misrepresent that he/she has mastered information on an academic exercise that he/she has not mastered.

Cheating includes -but not limited- to the following examples:

- Copying from another student's test paper.
- Allowing another student to copy from a test paper.
- Unauthorized use of course textbook or other material such as a notebook to complete a test or other assignment.
- Collaborating on a test, quiz or other project with any other person(s) without authorization.
- Using or possessing specifically prepared materials during a test, *e.g.*, notes, formula lists, notes written on the student's clothing, that are not authorized.
- Using electronic instruments, such as cell phones, pagers ... *etc.*, to share information, when prohibited.
- Taking a test for someone else or permitting someone else to take a test for him.

8.2.4. Academic misconduct includes other academically dishonest acts such as tampering with grades or taking part in obtaining or distributing any part of an un-administered test.

9. Complaints procedures

Students may submit petitions to be exempted from certain rules or regulations such as assigned academic load or disqualification actions or module prerequisites.

The complaints procedure ensures that the student's opinion about any action taken against him/her is handled. Students submit their verbal/written complaints/petitions to the students' affairs office/programme leader. Students must submit their complaints within one month of the occurrence of the action otherwise MSA is under no obligation to consider this complaint. The processing of these complaints is the responsibility of the office of Students' Affairs/programme leader. The complaint is discussed with the concerned staff member(s). An immediate feedback is given to the student if the student feels that the matter has been treated justly or the action has been remedied then the complaint is filed.

In the event that the student is not satisfied with how the complaint is handled, the issue is escalated to the Faculty Dean. If the student is still unsatisfied the issue can be presented to the University President for final decision.

Courses Outlines

Level One Courses

Computer and Applications

Code: CSP 101 **Pre-requisites:** None **Supervision Department:** Pharmacognosy

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course provides the students with basic knowledge about the internet, the World Wide Web and introduces basic software and hardware concepts and terminology, as well as, the types of application software such as personal productivity tools, scientific visualization and graphics applications, and different business applications.

English for Academic Purpose and Medical Terminology

Code: ENG 101 **Pre-requisites:** ELAT Placement Exam

Supervision Department: Organic Chemistry

Credit hours: 3 **Contact hours:** 3

Course Outline:

English 101 is an academic writing course for College English learners. The course teaches writing in a straightforward manner, using a step-by-step approach, in addition to bases of medical terminology. Clear models and varied practice helps to develop confidence and style in writing.

Mathematics

Code: MTH 101 **Pre-requisites:** None **Supervision Department:** Biochemistry

Credit hours: 2 **Contact hours:** 2

Course Outline:

This course helps the students to recognize the basic knowledge of mathematics which aids in solving pharmaceutical problems.

Organic Chemistry 1

Code: PC 111 **Pre-requisites:** None **Department:** Organic Chemistry

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course is concerned with studying of important aliphatic compounds such as: aliphatic alkanes, alkenes, alkynes, alkyl halides, alcohols, aldehydes, ketones, acids, esters, ethers and amines; dealing with their chemical properties, preparation, reactivity and reactions.

Pharmacognosy 1

Code: PG 101 **Pre-requisites:** None **Department:** Pharmacognosy

Credit hours: 3 **Contact hours:** 4

Course Outline:

The course is concerned with the study of drugs from natural products, the methods of cultivation, collection and drying of these drugs. The course focuses on medicinal drugs from leaves, flowers and barks with their active constituents, medicinal uses and contraindications.

Introduction to Pharmaceutics

Code: PT 101 **Pre-requisites:** None **Department:** Pharmaceutics and Industrial Pharmacy

Credit hours: 2 **Contact hours:** 2

Course Outline:

This course is concerned with introducing students to the history of pharmacy as well as the profession of pharmacy with an emphasis on the contribution of the pharmacists to healthcare in various settings.

Anatomy and Histology

Code: PO 101 **Pre-requisites:** None **Department:** Pharmacology and Toxicology

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course provides comprehensive knowledge about the basic structure of the human body and its clinical significance that provides a strong foundation for future studies. It deals with human morphology that starts with the cellular level of organization followed by tissue, organ and system levels. This course is also concerned with teaching the students the basic histological structures of different cells and tissues of human body; preparing them for making correlation between function and structure of various tissues.

English Language for Study Skills

Code: ENG 102 **Pre-requisites:** ENG 101

Supervision Department: Organic Chemistry

Credit hours: 3 **Contact hours:** 3

Course Outline:

This course teaches the students to develop formal reports and business proposals writing, note taking and oral presentation skills, show the students how to acquire study skills that would facilitate any research process and state types of business writing, such as reports, business letters, memos, and Job related document (Résumé & application letter) as well as dealing with Job Interview.

Physical Pharmacy

Code: PT 102 **Pre-requisites:** None

Department: Pharmaceutics and Industrial Pharmacy

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course is concerned with providing basic background information on physicochemical properties of drugs and drug products and understanding how physicochemical characteristics affect formulation of drug products.

Organic Chemistry 2

Code: PC 112 **Pre-requisites:** PC 111 **Department:** Organic Chemistry

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course is concerned with studying important aromatic compounds such as benzene, aromatic arenes, aromatic alkyl halides, phenols, nitrogenous compounds and poly nuclear compounds concerning their chemical properties, preparation, reactivity and reactions.

Pharmacognosy 2

Code: PG 102

Pre-requisites: PG 101 **Department:** Pharmacognosy

Credit hours: 3

Contact hours: 4

Course Outline:

The course is a continuation of the previous one. It is concerned with studying crude drugs from seeds, fruits, herbs, subterranean organs and the unorganized drugs with their active constituents, medicinal uses and contraindications.

Analytical Chemistry 1

Code: PC 123

Pre-requisites: None **Department:** Analytical Chemistry

Credit hours: 3

Contact hours: 4

Course Outline:

This course enables the students to comprehend the most important chemical reactions required for qualitative analysis. Students are introduced to the differences between ions using laboratory reagents. In addition, the students explore the analytical methods for identification of unknown chemical powder depending on simple chemical test.

Psychology and Sociology for Pharmacy

Code: BS 101

Pre-requisites: None

Supervision Department: Analytical Chemistry

Credit hours: 2

Contact hours: 2

Course Outline:

This course covers the principles of psychology and sociology applicable to many different health contexts in the corresponding health organizations. It also, introduces a wide array of theoretical perspectives, sociological aspects and research methods insight into health related behavior.

Level Two Courses

English Language for Research Purpose

Code: ENG 201

Pre-requisites: ENG 102

Supervision Department: Organic Chemistry

Credit hours: 3

Contact hours: 3

Course Outline:

This course prepares the students for writing research papers and project reports, emphasizes research skills necessary for writing research papers, provides a survey of different articles on specialized topics. It also, trains the students on rhetorical awareness beyond traditional composition, intensive writing practice with a thorough guidance on using references and citing sources.

Analytical Chemistry 2

Code: PC 223

Pre-requisites: PC 123 **Department:** Analytical Chemistry

Credit hours: 3

Contact hours: 4

Course Outline:

This course introduces the students to the fundamental principles underlying the quantitative analytical chemistry and stoichiometric determinations. Students comprehend the basic titrimetric methods of chemical analysis covering the major types of reactions; acid-base, aqueous and non-aqueous titrations, metal/ligand complexation, and finally precipitation.

Basic Microbiology and Microbial Genetics

Code: PM 211 **Pre-requisites:** None **Department:** Microbiology and Immunology

Credit hours: 2 **Contact hours:** 2

Course Outline:

This course includes basic knowledge about various types of microorganisms with details about structure, morphology, components of each type. Besides, the course includes the structure and function of the bacterial DNA, natural genetic processes in bacteria (conjugation, transformation, transduction), recombination and mutation.

Organic Chemistry 3

Code: PC 211 **Pre-requisites:** PC 112 **Department:** Organic Chemistry

Credit hours: 4 **Contact hours:** 5

Course Outline:

This course focuses on the study of heterocyclic rings; their chemical properties, preparation, reactivity and reactions. The stereo-part deals with studying different types of isomers. The new title which is 'spectroscopy' revealed to structure elucidation and identification by using modern spectroscopic techniques (namely; IR, ¹H NMR, ¹³C, NMR and mass spectroscopy).

Pharmaceutical Dosage Form 1

Code: PT 211 **Pre-requisites:** PT 102

Department: Pharmaceutics and Industrial Pharmacy

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course is concerned with giving the students an insight on the design, formulation, manufacture and evaluation of liquid dosage forms and their related theoretical scientific bases. The course will give full information about the solution, colloid, suspension and emulsion, the role of pharmaceutical excipients applied in their preparation and the main problems encountered during their preparation and the developed methods to overcome these problems.

Physiology

Code: PO 201 **Pre-requisites:** PO 101 **Department:** Pharmacology and Toxicology

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course provides the students with fundamentals of functions of various body organs and systems.

Chemistry of Natural Products 1

Code: PG 212 **Pre-requisites:** PG 102 and PC 211 **Department:** Pharmacognosy

Credit hours: 3 **Contact hours:** 4

Course Outline:

The course is concerned with the study of the chemistry of different classes of natural constituents including carbohydrates, different types of glycosides (cardiac, anthraquinones, flavonoids...) their structures, and methods of isolation, purification, detection and quantitative estimation, in addition to study the pharmacological actions and therapeutic uses of these natural constituents.

Analytical Chemistry 3

Code: PC 224 **Pre-requisites:** PC 223 **Department:** Analytical Chemistry

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course displays the basic knowledge needed for comprehending the electrochemical techniques of analysis with special focus on potentiometry, conductometry and polarography together with the bases of redox reactions and their applications.

Pharmaceutical Dosage Form 2

Code: PT 212 **Pre-requisites:** PT 211

Department: Pharmaceutics and Industrial Pharmacy

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course is concerned with highlighting the role of skin in percutaneous absorption, the factors affecting skin absorption and role of skin enhancers. The course is also focused on the design, formulation, manufacture and evaluation of topical as well as transdermal semi-solid dosage forms and different types of suppositories.

Immunology and Virology

Code: PM 212 **Pre-requisites:** PM 211 and PO 201 **Department:** Microbiology and Immunology

Credit hours: 2 **Contact hours:** 2

Course Outline:

The Immunology course is designed as to give students insights on T and B cell development, types of immunity (innate and adaptive; cell mediated and humoral), human immune responses to diseases, inflammatory responses, structure, production and function of antibodies, antibody diversity and interactions, autoimmunity and serological reactions. As for the Virology part students will be provided by information about structure, replication and classification of viruses, variety, epidemiology, diagnosis, treatment, prevention and control of viral infections.

Pharmaceutical Microbiology

Code: PM 213 **Pre-requisites:** PM 211 **Department:** Microbiology and Immunology

Credit hours: 3 **Contact hours:** 4

Course Outline:

Students in this course study the basic knowledge about chemotherapeutic agents, antibiotics and various sterilization techniques (the mode of action of antibiotics and other antimicrobial agents, know how each sterilization process destruct microorganisms or prevent its presence within a system. Also begin to recognize methods of evaluation of the potency of antibiotics, preservatives and disinfectants. In addition, raising the awareness of methods for testing efficiency of each sterilization process, methods of controlling microorganisms in the lab, hospital and the pharmaceutical company and methods for assessment of a new antibiotic.

Pharmaceutical Business Administration

Code: MS 201 **Pre-requisites:** ENG 101

Supervision Department: Pharmaceutical Chemistry

Credit hours: 2 **Contact hours:** 2

Course Outline:

This course is concerned with introducing pharmacy students to the basics of managing a business,

development of professional aspects of owning and managing pharmacy practice. Students also learn business terminology and provide preliminary study into the areas of economics, global business, ethics, business ownership, business management, human resource management, marketing, accounting and finance. As well as, exploring the basic concepts and processes of management and the functional roles and processes of planning, leading, organizing, and controlling.

Level Three Courses

Chemistry of Natural Products 2

Code: PG 314 **Pre-requisites:** PG 212 **Department:** Pharmacognosy

Credit hours: 3 **Contact hours:** 4

Course Outline:

The course is concerned with alkaloids, as one of the major plant constituents, their structures, pharmacological actions isolation, purification, identification and quantitative estimation which will lead to its efficient use in different pharmaceutical preparations. It is concerned also with volatile oils as an important plant constituents regarding methods of preparation, different chemical classes of volatile oil isolates, uses and methods of isolation, identification and quantitative estimation.

Biochemistry I

Code: PB 304 **Pre-requisites:** PC 211 and PO 201 **Department:** Biochemistry

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course includes the fundamental concepts and terminology of biochemistry, the chemical structure and functions of different food stuffs, enzymes, and nucleoproteins. It is also concerned with the biological and biochemical properties of proteins, enzymes, nucleic acids, and porphyrins in addition to the metabolism of nucleic acids, hemoproteins, and biological oxidation and related processes.

Instrumental and Applied Analysis

Code: PC 322 **Pre-requisites:** PC 224 **Department:** Analytical Chemistry **Credit hours:** 3

Contact hours: 4

Course Outline:

This course introduces the advanced instrumental and separation methods for chemical analysis, including spectroscopic and chromatographic methods. In addition, it includes applied analysis of water samples, water pollution and water pollution management or control. Also, the course provides general theory and explanation within identified frameworks for lipid analysis and its application in the identification and analysis of oils and fats samples reported for edible use.

Medical Microbiology

Code: PM 311 **Pre-requisites:** PM 212 **Department:** Microbiology and Immunology

Credit hours: 3 **Contact hours:** 4

Course Outline:

Medical Microbiology provides two main topics "Medical Bacteriology" and "Medical Mycology". They present the general concepts of both types of microorganisms and details about their major pathogens of humans. The course illustrates the microbiological aspects of infectious disease, demonstrate the clinical symptoms of each disease, show methods of treatment of these diseases, predict the spreading ability of epidemic diseases and employ the student's awareness of laboratory diagnosis of infectious disease.

Pharmacology I

Code: PO 311 **Pre-requisites:** PO 201 **Department:** Pharmacology and Toxicology **Credit hours:** 4 **Contact hours:** 5

Course Outline:

The course introduces basic pharmacology studies of different body systems and major drug categories on cardiovascular diseases, respiratory and gastrointestinal tracts with special focus on the autonomic nervous system. The students learn to have detailed working aspects of physiology and pathology as well as pharmacology of molecular drugs at receptor sites and ion channels. The practical part teaches the students different sites of drugs action and different routes of administration of drugs.

Pharmaceutical Dosage Form 3

Code: PT 311 **Pre-requisites:** PT 212
Department: Pharmaceutics and Industrial Pharmacy
Credit hours: 3 **Contact hours:** 4

Course Outline:

This course is concerned with the design, formulation, manufacture and evaluation of solid dosage forms, as well as acquainting the students to the compounding and quality control procedures of different solid dosage forms.

Applied Phytochemistry

Code: PG 321 **Pre-requisites:** PG 314 **Department:** Pharmacognosy
Credit hours: 2 **Contact hours:** 2

Course Outline:

This course provides students the study of the basics of methods of extraction, isolation of various secondary metabolites. Different chromatographic techniques (*e.g.* PC, TLC, GC, HPLC, UPLC.....) and their applications in the separation of active constituents from their natural sources. Structural elucidation of the isolated compounds using different techniques (*e.g.* UV, IR, NMR, HNMR, ¹³CNMR, Mass spectrometry.....)

Biochemistry 2

Code: PB 305 **Pre-requisites:** PB 304 **Department:** Biochemistry
Credit hours: 3 **Contact hours:** 4

Course Outline:

This course provides the basic knowledge about carbohydrates and lipids chemistry, the metabolic processes involving carbohydrates, proteins and lipids occurring in the human body. It also concerns the different biochemical pathways and the regulatory steps in each biochemical pathway together with the integration between the different biochemical pathways occurring in the human body.

Sterile Products and Reaction Kinetics

Code: PT 321 **Pre-requisites:** PT 102 and PT 211
Department: Pharmaceutics and Industrial Pharmacy
Credit hours: 3 **Contact hours:** 4

Course Outline:

This course is concerned with providing the students with the fundamental principles of the reaction kinetics process, reaction orders, mechanisms of drugs degradation, in addition to their application for assessing drugs

and products stability. The course will provide full information about formulation, manufacturing and the quality control of the sterile products, namely ophthalmics and parenterals, as well as providing the students with the knowledge of the applications of radiopharmaceuticals, measurement of radioactivity and formulation of radiopharmaceuticals.

Pathophysiology and Parasitology

Code: PM 312 **Pre-requisites:** PM 212 **Department:** Microbiology and Immunology

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course is divided into two parts:

Pathophysiology part: Provides Pharmacy students with fundamentals of pathophysiology of common diseases of different body systems and the rationale of the therapy.

Parasitology part: Provides Pharmacy students with basic knowledge about various types of parasites, raise the awareness to important parasites especially those endemic in Egypt and the modes of transmission, laboratory diagnosis and treatment of each parasite.

Pharmaceutical Chemistry I

Code: PC 331 **Pre-requisites:** PC 211 **Department:** Pharmaceutical Chemistry

Credit hours: 3 **Contact hours:** 4

Course Outline:

The course is concerned with studying chemotherapeutic agents and their applications in medicinal fields with a focus on structure activity relationship, detection of purities and determination of active constituent concentration in dosage forms.

Pharmacology 2

Code: PO 312 **Pre-requisites:** PO 311 **Department:** Pharmacology and Toxicology

Credit hours: 3 **Contact hours:** 4

Course Outline:

pharmacology II drives the students to study central nervous systems, blood diseases and drugs acting on the endocrines. The course is engaged with studying various mechanism of action of drugs. The practical course tends to be more sophisticated where the students learn how to deal with experimental animals and how to investigate the mechanism of action of drugs by various techniques in vitro and in vivo.

Ethics and Safety

Code: RS 302 **Pre-requisites:** Sophomore Students

Supervision Department: Pharmaceutics and Industrial Pharmacy

Credit hours: 2 **Contact hours:** 2

Course Outline:

This course provides the students with basic knowledge about the importance of both ethical and biosafety aspects as a rapidly growing field. It helps them to understand, identify and solve problems in critical, creative and ethical manner and to recognize the value of self and others in order to be a productive member of a diverse global society. This course will prepare the students to embark on related post –graduate studies of interest which would provide better opportunities and advancement in the relevant areas of pharmacology ...etc.

Level Four Courses

Clinical Biochemistry and Molecular Biology

Code: PB 402 **Pre-requisites:** PB 305 **Department:** Biochemistry

Credit hours: 3 **Contact hours:** 4

Course Outline:

The course is concerned with reviewing and monitoring the biochemical changes in specific diseases, the diagnostic importance of some hormones and enzymes. Studying the concepts of clinical molecular biology and the application of clinical biochemistry in the diagnosis of cancer.

Pharmacology 3

Code: PO 413 **Pre-requisites:** PO 312 **Department:** Pharmacology and Toxicology

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course provides basic knowledge about the commonly used groups of antibiotic drugs and their implications in therapy of disease and health promotion. It is also concerned with the safe use of drugs as regards adverse effects, contraindications and drug interactions.

Industrial Pharmacy 1

Code: PT 431 **Pre-requisites:** PT 311

Department: Pharmaceutics and Industrial Pharmacy

Credit hours: 3 **Contact hours:** 4

Course Outline:

The course is concerned with providing the students with experience in machinery, equipment and peripherals used in a drug manufacturing facility. Also, familiarizing them with some pharmaceutical operations used in pharmaceutical industry, such as heat transfer, distillation, evaporation, crystallization, filtration, extraction, drying..... etc.

Pharmaceutical Chemistry 2

Code: PC 431 **Pre-requisites:** PC 331 **Department:** Pharmaceutical Chemistry

Credit hours: 3 **Contact hours:** 4

Course Outline:

The course is concerned with studying different pharmacological classes of drugs, their mechanisms of action, chemical synthesis, identification of pharmacophores and determination of active constituent concentration in dosage forms.

Biopharmaceutics and Pharmacokinetics

Code: PT 423 **Pre-requisites:** PT 102 and PT 321

Department: Pharmaceutics and Industrial Pharmacy

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course is concerned with the terminology related to the pharmacokinetics and biopharmaceutics science, including plasma concentration – time profile after the administration of different dosage forms and compartmental models and their importance. The course introduces the students to the general principles of drug bioavailability, the pharmaceutical and physiological factors affecting the drug bioavailability, bioequivalence and as well as extend the students' knowledge about pharmacokinetics, bio pharmaceutics and the various parameters affecting them.

Public Health

Code: PM 412 **Pre-requisites:** PM 311 **Department:** Microbiology and Immunology

Credit hours: 1 **Contact hours:** 1

Course Outline:

This course recognizes the role of pharmacist in the public and community, recognize, appreciate and analyze different problems in the community that may affect public health and to specify the pharmacist role in its manipulation. Also the course helps to determine, design and evaluate the methods needed to control environmental and communicable hazards.

Industrial Pharmacy 2

Code: PT 432 **Pre-requisites:** PT 431

Department: Pharmaceutics and Industrial Pharmacy

Credit hours: 2 **Contact hours:** 2

Course Outline:

The course is concerned with providing the students with experience in machinery, equipment and peripherals used in a drug manufacturing facility. Also, familiarizing them with some pharmaceutical operations used in pharmaceutical industry, such as size reduction, size separation, size enlargement, mixing, drying and milling,..... etc

Clinical Pharmacokinetics

Code: PL 402 **Pre-requisites:** PT 432 **Department:** Clinical Pharmacy

Credit hours: 3 **Contact hours:** 4

Course Outline:

The course is concerned with investigating, reviewing and evaluating (qualitatively and quantitatively) the processes of drug distribution, metabolism and elimination. Also students will be able to recognize the pharmacokinetics of different dosage forms.

Pharmacy Practice

Code: PL 403 **Pre-requisites:** Junior students

Department: Pharmaceutics and Industrial Pharmacy

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course teaches the students how to critically investigate the structures, processes and outcomes of a variety of services provided by community pharmacies. Build a patient care practice capable of providing a consistent service to every patient. Enhance pharmacy practice skills through contact with patients as well as health professionals with emphasis on non-prescription medication counseling, health promotion, and disease prevention activities.

Toxicology and First Aid

Code: PO 422 **Pre-requisites:** PO 312 **Department:** Pharmacology and Toxicology

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course is concerned with the study of the adverse effects of chemicals on human. It studies the harmful effects of biological, chemical and physical agents in biological systems that cause damage. The course

focuses on the methods of prevention and treatment.

Research Methodology

Code: RS 402 **Pre-requisites:** Junior Students

Supervision Department: Biochemistry

Credit hours: 2 **Contact hours:** 2

Course Outline:

This course is concerned with scientific thinking, ethical frame works and research. It will prepare the student for the graduation projects.

Marketing and Drug Promotion

Code: MS 401 **Pre-requisites:** MS 201

Supervision Department: Pharmaceutical Chemistry

Credit hours: 2 **Contact hours:** 2

Course Outline:

This course explains the marketing functions of product/service planning, pricing, distribution, and promotion, as well as, the relationship between previous marketing approaches and marketing trends in the New Economy, define marketing terms, concepts, models, and processes, conduct research to demonstrate research skills using the Internet, textbook, and marketing periodicals. As well as, comparing, contrasting or articulating a new point of view using critical thinking skills and creating a marketing plan for a business that demonstrates knowledge of material covered in class.

Level Five Courses

Therapeutics

Code: PL 503 **Pre-requisites:** PO 312

Department: Clinical Pharmacy

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course aims at extending students' knowledge about the therapeutics of different disease states. The student will learn how to collect data about patients and how to correlate patient history with the proper medication. This is expected to improve the drug monitoring ability of the student.

Clinical Pharmacy and Drug Information

Code: PL 504 **Pre-requisites:** PO 312

Department: Clinical Pharmacy

Credit hours: 3 **Contact hours:** 4

Course Outline:

This course is concerned with interpreting knowledge into the provision of drug information to patients and to other health care professionals and to integrate knowledge into the provision of a clinical intervention service to patients and other health care professionals for a specific disease state.

Clinical Pharmacology and Drug Interaction

Code: PO 512 **Pre-requisites:** PO 312 **Department:** Pharmacology and Toxicology

Credit hours: 3 **Contact hours:** 4

Course Outline:

It is science of drugs and their clinical uses. The course is underpinned by pharmacology I and pharmacology II with added principles of clinical applications and principles in real situations. The course bridges the gap between clinical practice and laboratory science. It aims to prepare pharmacists skilled in areas of tailoring the

management plan to specific patients and medication safety as well as, detection, prevention and management of drug interactions.

Drug Design

Code: PC 532 **Pre-requisites:** PC 431 **Department:** Pharmaceutical Chemistry

Credit hours: 3 **Contact hours:** 4

Course Outline:

The course is concerned with recognition of fundamental aspects and current methodologies involved in drug discovery process, critically examines the metabolic changes in drug molecules and highlights the concept of drug latention in prodrug.

Pharmaceutical Biotechnology

Code: PM 511 **Pre-requisites:** PM 211 and PB 402 **Department:** Microbiology and Immunology

Credit hours: 2 **Contact hours:** 2

Course Outline:

This course demonstrates the role of molecular biology and genetic engineering in development of biological sciences, appraise the role of biotechnology as an alternate source of producing natural products and reflect the use of biotechnology for production of pharmaceutical products and environmental application.

Independent Studies in Pharmaceutical Sciences

Code: RS 511 **Pre-requisites:** RS 402 and Senior Students

Supervision Department: All

Credit hours: 4 **Contact hours:** -

Course Outline:

This course allows the student to demonstrate the ability to carry out a sustained piece of research, set an action plan of work for the practical part and acquire the skills of literature surveying, analyzing information, interpreting, suggesting solutions and writing reports. In addition to, some soft skills as presentation skills, communication skills, time management.

Quality Control and Quality Assurance

Code: PC 522 **Pre-requisites:** PC 322 and PM 213

Department: Analytical Chemistry, Pharmaceutics and Microbiology and Immunology

Credit hours: 2 **Contact hours:** 2

Course Outline:

The course gives an overview of Quality Management, Good Manufacturing Practices, and the role of regulatory bodies in the healthcare industries. It also introduces the requirements for safety and hazards of segregation. It includes stability indicating methods for assay of raw materials as well as pharmaceutical products. It gives an overview on drug manufacturing processes and operations. It is also concerned with different sources of microbial contamination and its effect on pharmaceutical products, in addition to the evaluation of the microbiological quality of different dosage forms and its conformity to pharmacopoeial specifications.

Drug Delivery Systems

Code: PT 512

Pre-requisites: PT 311

Department: Pharmaceutics and Industrial Pharmacy

Credit hours: 2

Contact hours: 2

Course Outline:

This course is concerned with the modified drug delivery systems, mechanisms of the drug release, applications of nanotechnology in drug delivery, physical and biological barriers affects drug transport as a function of various routes of administration and the concept of drug targeting using drug carriers.

Pharmacotherapy of Diseases

Code: PL 505

Pre-requisites: PL 504 **Department:** Clinical Pharmacy

Credit hours: 3

Contact hours: 4

Course Outline:

The course is concerned with studying Neurologic and psychiatric disorders, renal diseases, liver diseases, diabetes mellitus and infectious diseases in order to delivers the rational drug and adjunctive therapy in the treatment of these selected diseases. In addition it deals with how to formulate a rational and safe drug regimen for a particular patient.

Pharmaceutical Ethics and Legislation

Code: PT 541 **Pre-requisites:** Senior Students

Department: Pharmaceutics and Industrial Pharmacy

Credit hours: 1

Contact hours: 1

Course Outline:

The course highlights on the relationships between pharmacists, patients, health professionals and society. It is also concerned with the laws and legislations governing the purchase, storage and the dispensing of controlled (drugs practice of pharmacy in Egypt) and contribution of pharmacists through ethical and drug registration rules including the rights and duties.

Research Project

Code: RS 512

Pre-requisites: RS 511 and Senior Students

Supervision Department: All

Credit hours: 6

Contact hours: -

Course Outline:

This course allows the student to apply previously acquired knowledge to a pharmaceutical research problem, demonstrate the ability to carry out a sustained piece of research, set an action plan of work for the practical part and acquire the skills of literature surveying, analyzing information, interpreting, suggesting solutions and writing reports. In addition to, some soft skills as presentation skills, communication skills, time management.

Level one: 1st Semester

Course Code	Course Title	Prerequisite	Credit	Assessment					
				Mid-term exam	Quizzes	Assignment	Practical/tutorial	Oral exam	Final exam
CSP 101	Computer and Applications	None	3	20	10	10	20	-	40
ENG 101	English for Academic Purposes and Medical Terminology	ELAT exam	3	20	20	20	-	-	40
MTH 101	Mathematics	None	2	20	15	25	-	-	40
PC 111	Organic Chemistry (1)	None	3	15	5	10	20	15	35
PG 101	Pharmacognosy (1)	None	3	15	5	10	20	15	35
PT 101	Introduction to Pharmaceutics	None	2	20	15	25	-	-	40
PO 101	Anatomy and Histology	None	3	15	15	-	20	-	50
Total			19						

Level one: 2nd Semester

Course Code	Course Title	Prerequisite	Credit	Assessment					
				Mid-term exam	Quizzes	Assignment	Practical/Tutorial	Oral exam	Final exam
ENG 102	English Language for Study Skills	ENG 101	3	20	-	40	-	-	40
PT 102	Physical Pharmacy	None	3	15	5	10	20	15	35
PC 112	Organic Chemistry (2)	PC 111	3	15	5	10	20	15	35
PG 102	Pharmacognosy (2)	PG 101	3	15	5	10	20	15	35
PC 123	Analytical Chemistry (1)	None	3	15	5	10	20	15	35
BS 101	Psychology and Sociology for Pharmacy	None	2	20	15	25	-	-	40
Total			17						

Level two: 3rd Semester

Course Code	Course Title	Prerequisite	Credit	Assessment					
				Mid-term exam	Quizzes	Assignment	Practical /tutorial	Oral exam	Final exam
ENG 201	English Language for Research Purpose	ENG 102	3	20	-	40	-	-	40
PC 223	Analytical Chemistry (2)	PC 123	3	15	5	10	20	15	35
PM 211	Basic Microbiology and Microbial Genetics	None	2	15	5	10	20	15	35
PC 211	Organic Chemistry (3)	PC 112	4	15	5	10	20	15	35
PT 211	Pharmaceutical Dosage Form (1)	PT 102	3	15	5	10	20	15	35
PO 201	Physiology	PO 101	3	15	5	10	20	15	35
Total			18						

Level two: 4th Semester

Course Code	Course Title	Prerequisite	Credit	Assessment					
				Mid-term exam	Quizzes	Assignment	Practical /Tutorial	Oral exam	Final exam
PG 212	Chemistry of Natural Products (1)	PG 102 and PC 211	3	15	5	10	20	15	35
PC 224	Analytical Chemistry (3)	PC 223	3	15	5	10	20	15	35
PT 212	Pharmaceutical Dosage Form (2)	PT 211	3	15	5	10	20	15	35
PM 212	Immunology and Virology	PM 211 and PO 201	2	20	5	20	-	15	40
PM 213	Pharmaceutical Microbiology	PM 211	3	15	5	10	20	15	35
MS 201	Pharmaceutical Business Administration	ENG 101	2	20	15	25	-	-	40
Total			16						

Level three: 5th Semester

Course Code	Course Title	Prerequisite	Credit	Assessment					
				Mid-term exam	Quizzes	Assignment	Practical /tutorial	Oral exam	Final exam
PG 314	Chemistry of Natural Products (2)	PG 212	3	15	-	15	20	15	35
PB 301	Biochemistry (1)	PC 211 and PO 201	3	15	-	15	20	15	35
PC 322	Instrumental and Applied Analysis	PC 224	3	15	-	15	20	15	35
PM 311	Medical Microbiology	PM 212	3	15	-	15	20	15	35
PO 311	Pharmacology (1)	PO 201	4	15		15	20	15	35
PT 311	Pharmaceutical Dosage Form (3)	PT 212	3	15	-	15	20	15	35
Total			19						

Level three: 6th Semester

Course Code	Course Title	Prerequisite	Credit	Assessment					
				Mid-term exam	Quizzes	Assignment	Practical/tutorial	Oral exam	Final exam
PG 321	Applied Phytochemistry	PG 314	2	20	-	25	-	15	40
PB 303	Biochemistry (2)	PB 301	3	15	-	15	20	15	35
PT 321	Sterile Products and Reaction Kinetics	PT 102 and PT 211	3	15	-	15	20	15	35
PM 312	Pathophysiology and Parasitology	PM 212	3	15	-	15	20	15	35
PC 331	Pharmaceutical Chemistry (1)	PC 211	3	15	-	15	20	15	35
PO 312	Pharmacology (2)	PO 311	3	15	-	15	20	15	35
RS 302	Ethics and Safety	Sophomore Students	2	20	-	40	-	-	40

Level four: 7th Semester

Course Code	Course Title	Prerequisite	Credit	Assessment					
				Mid-term exam	Quizzes	Assignment	Practical / tutorial	Oral exam	Final exam
PB 401	Clinical Biochemistry and Molecular Biology	PB 303	3	15	-	15	20	15	35
PO 413	Pharmacology (3)	PO 312	3	15	-	15	20	15	35
PT 431	Industrial Pharmacy (1)	PT 311	3	15	-	10	25	15	35
PC 431	Pharmaceutical Chemistry (2)	PC 331	3	15	-	15	20	15	35
PT 423	Biopharmaceutics and Pharmacokinetics	PT 102 and PT 321	3	15	-	15	20	15	35
	Elective (1)	Course Prerequisite	3						
PM 412	Public Health	PM 311	1	20	-	25	-	15	40
Total			19						

Level four: 8th Semester

Course Code	Course Title	Prerequisite	Credit	Assessment					
				Mid-term exam	Quizzes	Assignment	Practical/tutorial	Oral exam	Final exam
PT 432	Industrial pharmacy (2)	PT 431	2	20	-	25	-	15	40
PL 402	Clinical Pharmacokinetics	PT 423	3	20	-	10	15	15	40
PL 403	Pharmacy Practice	Junior Students*	3	15	-	15	20	15	35
PO 422	Toxicology and First Aid	PO 312	3	15	-	15	20	15	35
	Elective (2)	Course	3						
RS 402	Research Methodology	Junior Students*	2	20	-	40	-	-	40
MS 401	Marketing and Drug Promotion	MS 201	2	20	-	40	-	-	40
Total			18						

*Students achieving 109 credits

Level five: 9th Semester

Course Code	Course Title	Prerequisite	Credit	Assessment					
				Mid-term exam	Quizzes	Assignment	Practical/Tutorial	Oral exam	Final exam
PL 503	Therapeutics	PO 312	3	15	-	15	20	15	35
PL 504	Clinical Pharmacy and Drug Information	PO 312	3	15	-	15	20	15	35
PO 512	Clinical Pharmacology and Drug Interaction	PO 312	3	15	-	15	20	15	35
PC 532	Drug Design	PC 431	3	15	-	15	20	15	35
PM 511	Pharmaceutical Biotechnology	PM 211 and PB 401	2	20	-	25	-	15	40
RS 511	Independent Studies in Pharmaceutical Sciences	RS 402 and Senior Students*	4						
Total			18						

*Students achieving 136 credits

Level five: 10th Semester

Course Code	Course Title	Prerequisite	Credit	Assessment					
				Mid-term	Quizzes	Assignment	Practical/tutorial	Oral exam	Final exam
PC 522	Quality Control and Quality Assurance	PC 322 and PM 213	2	20	-	25	-	15	40
PT 512	Drug Delivery Systems	PT 311	2	20	-	25	-	15	40
PL 505	Pharmacotherapy of Diseases	PL 504	3	15	-	15	20	15	35
	Elective (3)	Course Prerequisite	3						
PT 541	Pharmaceutical Ethics and Legislation	Senior students	1	20	-	40	-	-	40
RS 512	Research Project	RS 511 and Senior Students*	As stated in the graduation project manual						
Total			17						

* Students achieving 136 credits

Elective courses

Course Code	Course Title	Prerequisite	Credit	Assessment					
				Mid-term exam	Quizzes	Assignment	Practical / tutorial	Oral exam	Final exam
PB 412	Clinical Nutrition	PB 303	3	15	-	25	25	-	35
PB 413	Bioanalysis	PB 303 and PC 322	3	15	-	25	25	-	35
PB 414	Advanced Clinical Chemistry	PB 401	3	15	-	25	20	15	35
PC 424	Forensic Analytical Chemistry	PC 322	3	20	-	10	15	15	40
PC 533	Advanced Medicinal Chemistry	PC 431	3	15	-	15	20	15	35
PC 412	Retrosynthesis of medicinal compounds	PC 431	3	15	-	15	20	15	35
PG 412	Herbal Medicine	PG 321	3	15	-	15	20	15	35
PM 421	Diagnostic Microbiology	PM 311	3	15	-	15	20	15	35
PM 422	Molecular Biology Techniques and Bioinformatics	PM 211 and PB 401	3	20	-	20	20	-	40

Course Code	Course Title	Prerequisite	Credit	Assessment					
				Mid-term exam	Quizzes	Assignment	Practical/tutorial	Oral exam	Final exam
PM 423	Basics of Proteomics	PM 211 and PB 401	3	20	-	20	20	-	40
PO 441	Pharmacogenetics	PO 312	3	15	-	15	20	15	35
PO 442	Over the counter drugs (OTC)	PO 312	3	15	-	15	20	15	35
PO 443	Pharmacovigilance	PO 312	3	15	-	15	20	15	35
PT 414	Cosmetics and toiletry formulation beauty aid and make up	PT 211	3	15	-	15	20	15	35
PL 411	Pharmacoeconomics and Epidemiology	PM 211 and PB 401	3	15	-	15	20	15	35
PT 513	Advanced Drug Delivery	PO 312	3	-	-	15	40	15	30