



Bachelor of Pharmacy Program Report

(2018 – 2019)

Prepared by

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Teaching Institution: Faculty of Pharmacy, Zagazig University,
Egypt

Awarding Institution: Zagazig University

Degree Award: Bachelor of Pharmacy

Length and Mode : 5 years; full- time

Program Coordinator: Prof. Ghada Shaker
Faculty of Pharmacy Dean

A- Basic Information:

1- Program Title: Bachelor of Pharmacy

2- Program Type: single

3- Number of Courses: 63

4- Departments:

a- Departments affiliated to faculty of pharmacy:

- Department of Analytical Chemistry
- Department of Biochemistry
- Department of Pharmaceutics
- Department of Medicinal Chemistry
- Department of Microbiology & Immunology
- Department of Pharmaceutical Organic Chemistry
- Department of Pharmacognosy
- Department of Pharmacology & Toxicology
- Department of Pharmacy Practice

b- Departments not affiliated to faculty of pharmacy:

- Histology and Anatomy departments (Faculty of Medicine)
- Mathematics department (Faculty of Science)
- English Language department (Faculty of Education)
- Accounting & Pharmacy Administration department (Faculty of Commerce)
- Human Rights department (Faculty of Law)
- Psychology department (Faculty of Education)

5- Co-coordinator:

- Prof. Ghada Shaker " dean of faculty of pharmacy"

6- External evaluator: Prof. Mahmoud Bakr Al-Ashmawi, Department of Pharmaceutical Chemistry, Mansoura University

B- Statistics:

1. No. of students admitting the program (2014 - 2015): 1142
2. No. of students admitting the program this year (2018 – 2019): 902
% decrease = 21 % (This was preferred by the faculty as this facilitated improving the education process)

The process of application, selection and approval for admission is carried out through a central national admission office supervised by the MOHE.

The number of enrolled students is determined annually by the SCU.

No. and percentage of students passing in each year/level/Semester:

Year	No. admitted	No. passing the exam.	Percentage
1 st year	1159	1010	87.14%
2 nd year	1119	950	.849%
3 rd year	1008	897	89%
4 th year	949	922	97.2%
5 th year	962	849	.883%

3. No. of students completing the program and as a percentage of those who started:

No. of students admitted to the program (2014 – 2015)	No. of students completed the program (2018-2019)	% of students completed the program
1142	849	74.34 %

4. Grades: no. and percentage of each grade:

Year	Grade					Total	Total (pass)
	Excellent	Very Good	Good	Pass	Fail		
1st year	27	341	441	192	158	1159	1010
	2.6%	33.76%	43.66%	19%	27.3%	100%	87.14%

Year	Grade					Total	Total (pass)
	Excellent	Very Good	Good	Pass	Fail		
2 nd year	10	164	378	398	169	1119	950
	1.1%	17.26%	39.78%	41.9%	15.1%	100%	84.9%

Year	Grade					Total	Total (pass)
	Excellent	Very Good	Good	Pass	Fail		
3 rd year	74	265	348	210	111	1008	897
	8.2%	29.5%	38.8%	23.4%	11%	100%	89%

Year	Grade					Total	Total (pass)
	Excellent	Very Good	Good	Pass	Fail		
4 th year	130	407	307	78	27	949	922
	14.1%	44.14%	33.3%	8.46%	2.8%	100%	97.2%

Year	Grade					Total	Total (pass)
	Excellent	Very Good	Good	Pass	Fail		
5 th year	44	321	454	30	113	962	849
	5.2%	37.8%	53.5%	3.5%	11.75%	100%	88.3%

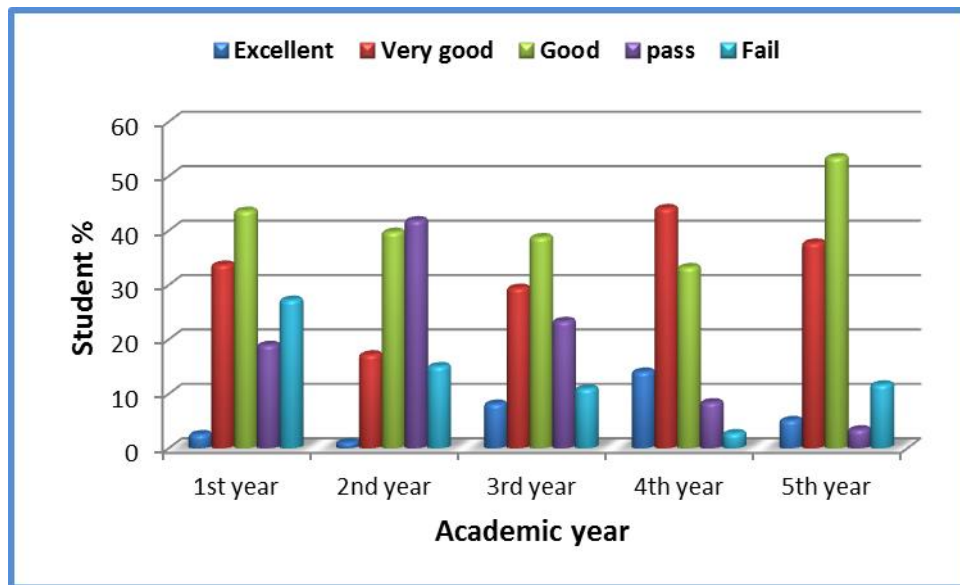


Fig. 1: Follow up of students' progress along the five years of the program.

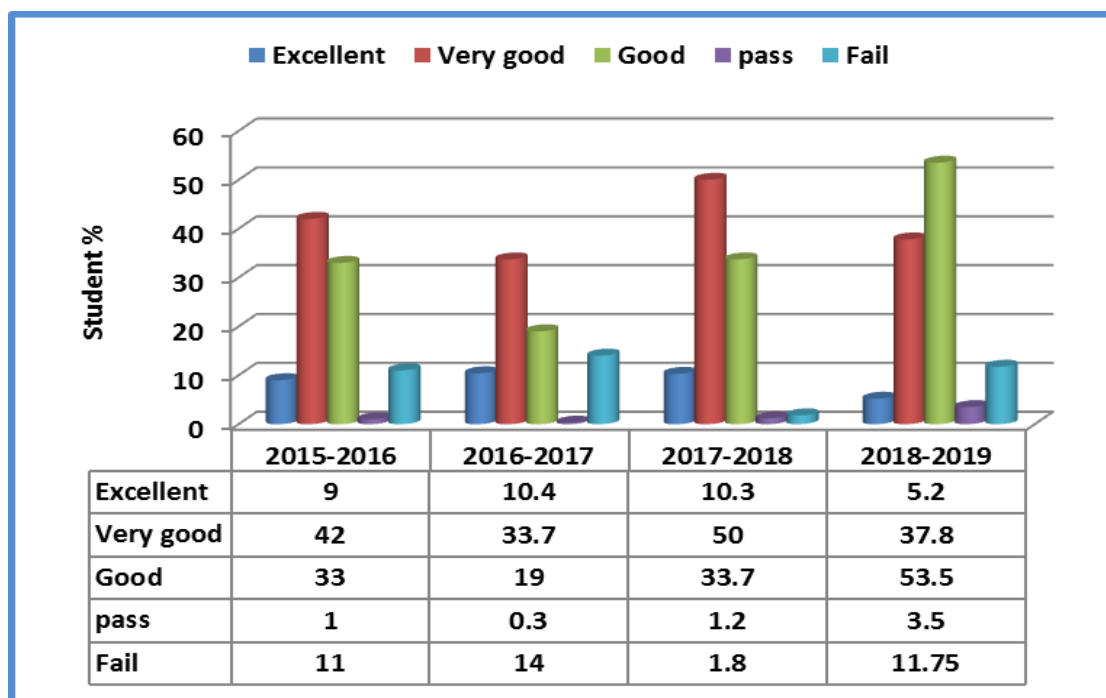


Fig. 2: Comparison between the grades of graduates along the past 4 years

In 2016 till 2018, the faculty applied objective student assessment such as MCQs, Matching and True and false questions, which resulted in a positive shift of student grades. By 2018-2019, the faculty decided to apply short essay questions comprising of at least 25% of the final written exam which resulted in normal distribution of grades.

C- Professional Information:

Academic Standards:

1. Achievement of Program Intended learning Outcomes.

The following table presents the courses taught in Bachelor of Pharmacy program and the covered ILOs through the courses`:

National Academic Reference Standards (NARS)	Program ILOS	Course (s) covering ILOs`
2-1 Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A1	<ul style="list-style-type: none">• General and Physical Chemistry• Pharmaceutical Organic Chemistry-1• Botany and Medicinal Plants• Analytical chemistry-1• English and Medical Terms• Principles of Math. And Statistics• Pharmaceutical Organic Chemistry-2• Analytical chemistry-2• Analytical chemistry-3• Pharmaceutical Organic Chemistry-3• Analytical chemistry-4• Pharmaceutical Organic Chemistry-4• Production of Raw Materials
	A2	<ul style="list-style-type: none">• Pharmaceutics-1• Pharmaceutics-2• Pharmacognosy-1• Pharmaceutics-3• General Microbiology & Immunology• Pharmacognosy-2• Pharmaceutics-4• Pharmaceutical Microbiology• Biopharmaceutics & Pharmacokinetics• Phytochemistry-1• Phytochemistry-2• Chromatography of Natural Products• Medicinal Chemistry-1• Bioassay1• Biotechnology of Natural Products• Medicinal Chemistry-2• Bioassay2• Pathology and Parasitology• Industrial Pharmacy-1• Applied Pharmacognosy• Industrial Pharmacy-2• Phytotherapy

	A3	<ul style="list-style-type: none"> • Histology and Anatomy • Physiology • Biochemistry-1 • Biochemistry-2 • Medical Microbiology • Biotechnology • Pharmacology-2 • Clinical Nutrition
	A4	<ul style="list-style-type: none"> • Human Rights and Professional Ethics • Psychology
	A5	<ul style="list-style-type: none"> • Accounting and pharmaceutical business administration
	A6	<ul style="list-style-type: none"> • Medical Microbiology • Toxicology-1 • Toxicology-2
	A7	<ul style="list-style-type: none"> • Hospital and Clinical Pharmacy • Community Pharmacy • Phytotherapy
2-2 Physico-chemical properties of various substances used in preparation of medicines including inactive and active ingredients as well as biotechnology and radio-labeled products.	A8	<ul style="list-style-type: none"> • General and Physical Chemistry • Pharmaceutics-2 • Pharmacognosy-1 • Pharmaceutics-3 • Pharmaceutics-4 • Pharmaceutical Microbiology • Biopharmaceutics & Pharmacokinetics • Phytochemistry-2 • Toxicology-1 • Toxicology-2 • Drug Design
	A9	<ul style="list-style-type: none"> • Pharmaceutical Microbiology • Biotechnology of natural products
	A10	<ul style="list-style-type: none"> • Hospital and Clinical Pharmacy • Quality Control
2-3 Principles of different analytical techniques using GLP guidelines and validation procedures.	A11	<ul style="list-style-type: none"> • Analytical chemistry-1 • Analytical chemistry-2 • Analytical chemistry-4 • Pharmaceutical Organic Chemistry-4 • Chromatography of natural products • Applied pharmacognosy-1 • Medicinal chemistry- 4 • Quality control
	A12	<ul style="list-style-type: none"> • Applied pharmacognosy-1 •
2-4 Principles of isolation, synthesis, purification, identification, and standardization methods of pharmaceutical compounds.	A13	<ul style="list-style-type: none"> • Pharmaceutics-1 • Pharmacognosy-2 • Phytochemistry-2 • Quality Control • Drug Design
	A14	<ul style="list-style-type: none"> • Pharmaceutical Microbiology • Analytical chemistry-3 • Analytical chemistry-4 • Bioassay-1

		<ul style="list-style-type: none"> • Bioassay-2
2-5 Principles of drug design, development and synthesis.	A15	<ul style="list-style-type: none"> • Pharmaceutical Organic Chemistry-1 • Medicinal Chemistry-4 • Drug design •
	A16	<ul style="list-style-type: none"> • Pharmaceutical Organic Chemistry-1 • Pharmaceutical Organic Chemistry-2 • Pharmaceutical Organic Chemistry-3 • Pharmaceutical Organic Chemistry-4 • Pharmacognosy2 • Production of Raw Materials • Medicinal Chemistry-1 • Medicinal Chemistry-2 • Medicinal Chemistry-3 • Medicinal Chemistry-4 • Drug Design
2-6 Properties of different pharmaceutical dosage forms including novel drug delivery systems.	A17	<ul style="list-style-type: none"> • Pharmaceutics-1 • Pharmaceutics-3 • Analytical chemistry-4 • Pharmaceutics-4 • Sterile Products and Controlled Drug Delivery Systems • Applied Pharmacognosy-2 • Summer training
	A18	<ul style="list-style-type: none"> • Sterile Products and Controlled Drug Delivery Systems • Drug design • Summer training
2-7 Principles of various instruments and techniques including sampling, manufacturing, packaging, labeling, storing and distribution processes in pharmaceutical industry	A19	<ul style="list-style-type: none"> • Pharmaceutics 3 • Pharmaceutics 4 • Sterile Products and Controlled Drug Delivery Systems • Industrial pharmacy 1 • Industrial pharmacy 2 • Histology and anatomy •
2-8 Principles of pharmacokinetics and biopharmaceutics with applications in therapeutic drug monitoring, dose modification and bioequivalence studies.	A20	<ul style="list-style-type: none"> • Drug Design • Sterile Products and Controlled Drug Delivery Systems • Medicinal Chemistry-4 • summer training •
2-9 Principles of hospital pharmacy including I.V. admixtures, TPN and drug distribution system	A21	<ul style="list-style-type: none"> • Hospital and Clinical Pharmacy • Community Pharmacy
	A22	<ul style="list-style-type: none"> • summer training
2-10 Principles of public health issues including sources and control of microbial contamination as well as sanitation, disinfection, sterilization	A23	<ul style="list-style-type: none"> • Toxicology-1 • Pharmaceutical Microbiology •
	A24	<ul style="list-style-type: none"> • General Microbiology & Immunology • Pharmaceutical Microbiology •

methods and microbiological QC of pharmaceutical products.	A25	<ul style="list-style-type: none"> • Pharmaceutical Microbiology •
2-11 Principles of body function in health and disease states as well as basis of genomic and different biochemical pathways regarding their correlation with different diseases	A26	<ul style="list-style-type: none"> • Biochemistry I • Physiology • Medical Microbiology • Clinical Biochemistry • Clinical Nutrition • Pathology and parasitology
	A27	<ul style="list-style-type: none"> • Toxicology-2 • Clinical Biochemistry-1 • Biochemistry 2 • Biochemistry I • Physiology
	A28	<ul style="list-style-type: none"> • General Microbiology & Immunology • Histology and Anatomy • Biochemistry-2 • Clinical Biochemistry-2 • Biotechnology of Natural Products
2-12 Etiology, epidemiology, laboratory diagnosis and clinical features of different diseases and their pharmaco-therapeutic approaches	A29	<ul style="list-style-type: none"> • Histology and Anatomy • Physiology • Biopharmaceutics & pharmacokinetics • Pharmacology-1 • Pharmacology-2 • Pharmacotherapy • Medical Microbiology • Microbiology-4 • Clinical Biochemistry • Hospital and Clinical Pharmacy-2 • Pathology and Parasitology • Clinical Pharmacology • Clinical Nutrition
	A30	<ul style="list-style-type: none"> • Physiology • Biochemistry I • Biopharmaceutics & pharmacokinetics • Pharmacology-1 • Pharmacotherapy • Biotechnology • Clinical Biochemistry-1 • Pathology and Parasitology • Clinical Pharmacology • Summer training
	A31	<ul style="list-style-type: none"> • Pharmacology-1 • Pharmacology-2 • Pharmacotherapy • Biotechnology • Bioassay-1 • Community Pharmacy • Bioassay-2 • Clinical Pharmacology
2-13 Pharmacological properties of drugs including mechanisms of	A32	<ul style="list-style-type: none"> • Pharmacognosy-1 • Phytochemistry-2

action, therapeutic uses, dosage, contra-indications, ADRs and drug interactions.		<ul style="list-style-type: none"> • Pharmacology-2 • Pharmacotherapy • Chromatography of Natural Products • Medicinal Chemistry-1 • Medicinal Chemistry-2 • Medicinal Chemistry-3 • Applied Pharmacognosy-2
2-14 Principles of clinical pharmacology, pharmacovigilance and the rational use of drugs.	A33	<ul style="list-style-type: none"> • Pharmacology-1 • Clinical Pharmacology
2-15 Basis of complementary and alternative medicine	A34	<ul style="list-style-type: none"> • Chromatography of Natural Products • Applied Pharmacognosy-2 • Clinical Nutrition
2-16 Toxic profile of drugs and other xenobiotics including sources, identification, symptoms, management control and first aid measures	A35	<ul style="list-style-type: none"> • Bioassay-2
	A36	<ul style="list-style-type: none"> • Pharmaceutics-1
2-17 Methods of biostatistical analysis and pharmaceutical calculations	A37	<ul style="list-style-type: none"> • Principles of Math. And Statistics • Bioassay-2 • Summer training
	A38	<ul style="list-style-type: none"> • Medicinal Chemistry-4 • Quality Control • Pharmaceutics-1 • Analytical chemistry-3 • Analytical chemistry-4 • Biopharmaceutics & Pharmacokinetics • Summer training
2-18 Principles of management including financial and human resources.	A39	<ul style="list-style-type: none"> • Accounting & Business Administration
2-19 Principles of drug promotion, sales and marketing, business administration, accounting and pharmacoconomics.	A40	<ul style="list-style-type: none"> • Drug Marketing and Communication Skills •
	A41	<ul style="list-style-type: none"> • Accounting & Business Administration
2-20 Principles of proper documentation and drug filing systems.	A42	<ul style="list-style-type: none"> • Pharmaceutics-4
2-21 Regulatory affairs, pharmacy laws and ethics of health care and pharmacy profession	A43	<ul style="list-style-type: none"> • Pharmaceutics-4 • Human Rights
3-1 Use the proper pharmaceutical and medical terms and abbreviations and symbols in pharmacy practice.	B1	<ul style="list-style-type: none"> • Histology and Anatomy • General Microbiology & Immunology • Pharmaceutical Microbiology • Physiology • Community Pharmacy • Biotechnology of Natural Products

		<ul style="list-style-type: none"> • Pathology and Parasitology • Applied Pharmacognosy-1 • Applied Pharmacognosy-2 • Botany and Medicinal Plants • Pharmaceutics-1 • English and Medical Terms • Summer training
3-2 Handle and dispose chemicals and pharmaceutical preparations safely	B2	<ul style="list-style-type: none"> • General and Physical Chemistry • Pharmaceutical Organic Chemistry-1 • Botany and Medicinal Plants • Analytical chemistry-1 • Analytical chemistry-2 • Analytical chemistry-3 • Analytical chemistry-4 • Pharmaceutical Organic Chemistry-2 • Pharmaceutical Organic Chemistry-3 • Pharmaceutical Organic Chemistry-4 • General Microbiology & Immunology • Pharmaceutical Microbiology • Phytochemistry-1 • Biochemistry-1 • Medical Microbiology • Production of Raw Materials • Phytochemistry-1 • Phytochemistry-2 • Biochemistry-2 • Biotechnology • Hospital and Clinical Pharmacy • Chromatography of Natural Products • Medicinal Chemistry-1 • Clinical Biochemistry-1 • Bioassay-1 • Bioassay-2 • Toxicology-1 • Biotechnology of Natural Products • Medicinal Chemistry-2 • Pharmacognosy-1 • Pharmacognosy-2 • Pharmaceutics-3 • Pharmaceutics-4 • Pathology and Parasitology • Applied Pharmacognosy-1 • Applied Pharmacognosy-2 • Summer training
	B3	<ul style="list-style-type: none"> • Pharmaceutics-1 • Pharmaceutics-3 • Pharmaceutics-4 • Hospital and Clinical Pharmacy • Quality Control
3-3 Compound, dispense, label, store and distribute medicines effectively and safely	B4	<ul style="list-style-type: none"> • Pharmaceutics-3 • Pharmaceutics-4 • Biopharmaceutics & Pharmacokinetics • Sterile Products and Controlled Drug Delivery Systems

		<ul style="list-style-type: none"> • Hospital and Clinical Pharmacy • Industrial Pharmacy-2 • Summer training
3-4 Extract, isolate, synthesize, purify, identify, and/or standardize active substances from different origins.	B5	<ul style="list-style-type: none"> • General and Physical Chemistry • Pharmaceutics-1 • Analytical chemistry-1 • Analytical chemistry-2 • Pharmacognosy-1 • Pharmacognosy-2 • Phytochemistry-1 • Biochemistry-1 • Phytochemistry-2 • Chromatography of Natural Products • Quality Control
	B6	<ul style="list-style-type: none"> • Pharmaceutical Organic Chemistry-1 • Pharmaceutical Organic Chemistry-2 • Analytical chemistry-2 • Pharmaceutical Organic Chemistry-3 • Pharmaceutical Organic Chemistry-4 • Production of Raw Materials • Medicinal Chemistry-1 • Medicinal Chemistry-2 • Medicinal Chemistry-3
	B7	<ul style="list-style-type: none"> • Analytical chemistry-3 • Analytical chemistry-4 • Pharmaceutical Microbiology
3-5 Select medicines based on understanding of etiology and pathophysiology of diseases	B8	<ul style="list-style-type: none"> • Pharmacology-1 • Pharmacology-2 • Community Pharmacy • Toxicology-2 • Clinical Pharmacology • Clinical Nutrition • Pharmacotherapy
3-6 Monitor and control microbial growth and carry out laboratory tests for identification of infectious and non-infectious diseases.	B9	<ul style="list-style-type: none"> • General Microbiology & Immunology • Biotechnology of Natural Products
	B10	<ul style="list-style-type: none"> • General Microbiology & Immunology • Biochemistry-1 • Medical Microbiology • Biochemistry-2 • Biotechnology • Clinical Biochemistry-1 • Pathology and Parasitology • Clinical Nutrition
3-7 Assess toxicity profiles of different xenobiotics and detect poisons in biological specimens	B11	<ul style="list-style-type: none"> • Toxicology-1
	B12	<ul style="list-style-type: none"> • Toxicology-1 • Applied Pharmacognosy-2
3-8 Apply techniques used in operating pharmaceutical equipment and instruments	B13	<ul style="list-style-type: none"> • Pharmaceutics-2 • Analytical chemistry-4 • Bioassay-1 • Bioassay-2 • Industrial Pharmacy-1 • Medicinal Chemistry-4

3-9 Maintain public awareness on rational use of drugs and social health hazards of drug abuse and misuse.	B14	<ul style="list-style-type: none"> • Pharmaceutical Microbiology • Pharmacology-1 • Toxicology-2 • Clinical Pharmacology • Summer training
3-10 Advise patients and other health care professionals about safe and proper use of medicines	B15	<ul style="list-style-type: none"> • Hospital and Clinical Pharmacy • Community Pharmacy •
3-11 Conduct research studies and analyze the results	B16	<ul style="list-style-type: none"> • Pharmacognosy-1 • Histology and Anatomy • Phytochemistry-1 • Phytochemistry-2 • Chromatography of Natural Products • Medicinal Chemistry-1 • Toxicology-1 • Medicinal Chemistry-2 • Toxicology-2
	B17	<ul style="list-style-type: none"> • Applied Pharmacognosy-1 • Medicinal Chemistry-3 • Advanced Pharmacology • Pharmacotherapy • Research Project • Applied Pharmacognosy-2 • Medicinal Chemistry-4 • Pharmacotherapy • Drug Design • Summer training
3-12 Employ proper documentation and drug filing systems	B18	<ul style="list-style-type: none"> • Advanced Pharmacology • Summer training
4-1 Apply pharmaceutical knowledge in the formulation of safe and effective medicines as well as in dealing with new drug delivery systems.	C1	<ul style="list-style-type: none"> • Pharmaceutics-1 • Pharmaceutics-3 • General Microbiology & Immunology • Pharmaceutics-4 • Pharmaceutical Microbiology • Sterile Products and Controlled Drug Delivery • Hospital and Clinical Pharmacy • Summer training
	C2	<ul style="list-style-type: none"> • Sterile Products and Controlled Drug Delivery • Summer training
4-2 Comprehend and apply GLP, GPMP, GSP and GCP guidelines in pharmacy practice	C3	<ul style="list-style-type: none"> • Pharmacognosy-2 • Pharmaceutical Microbiology • Medicinal Chemistry-1 • Clinical Biochemistry • Medicinal Chemistry-2 • Applied Pharmacognosy-1 • Medicinal Chemistry-3 • Industrial Pharmacy-2 • Applied Pharmacognosy-2 • Medicinal Chemistry-4 • Quality Control • Summer training

4-3 Apply qualitative and quantitative analytical and biological methods for QC and assay of raw materials as well as pharmaceutical preparations	C4	<ul style="list-style-type: none"> • General and Physical Chemistry • Analytical chemistry-1 • Analytical chemistry-2 • Analytical chemistry-3 • Pharmacognosy-1 • Analytical chemistry-4 • Pharmacognosy-2 • Phytochemistry-1 • Biochemistry-1 • Phytochemistry-2 • Biochemistry-2 • Chromatography of Natural Products • Medicinal Chemistry-1 • Clinical Biochemistry • Medicinal Chemistry-2 • Applied Pharmacognosy-1 • Medicinal Chemistry-3 • Quality Control
	C5	<ul style="list-style-type: none"> • pharmaceutics-1 • pharmaceutics-2 • Sterile Products and Controlled Drug Delivery • Medicinal chemistry-3 • Medicinal chemistry-4 • Quality Control • Drug Design • Medicinal Chemistry-1 • Bioassay-1 • Medicinal Chemistry-2 • Bioassay-2
4-4 Recognize and control possible physical and/or chemical incompatibilities that may occur during drug dispensing	C6	<ul style="list-style-type: none"> • Pharmacotherapy • Sterile Products and Controlled Drug Delivery
4-5 Select the appropriate methods of isolation, synthesis, purification, identification, and standardization of active substances from different origins.	C7	<ul style="list-style-type: none"> • Pharmaceutical Organic Chemistry-1 • Pharmaceutical Organic Chemistry-2 • Pharmaceutical Organic Chemistry-3 • Pharmaceutical Organic Chemistry-4 • Botany and Medicinal Plants • Pharmacognosy-1 • Pharmacognosy-2 • Phytochemistry-1 • Phytochemistry-2 • Biochemistry-1 • Chromatography of Natural Products
	C8	<ul style="list-style-type: none"> • Pharmaceutical Organic Chemistry-1 • Pharmaceutical Organic Chemistry-2 • Pharmaceutical Organic Chemistry-3 • Production of Raw Materials
	C9	<ul style="list-style-type: none"> • Analytical chemistry-3 • Analytical chemistry-4 • Physiology • Toxicology-2

		<ul style="list-style-type: none"> • Applied Pharmacognosy-1 • Applied Pharmacognosy-2 • Pharmaceutical Organic Chemistry-4
4-6 Apply the principles of bio-informatics and computer-aided tools in drug design	C10	<ul style="list-style-type: none"> • Pharmaceutical Organic Chemistry-4 • Production of Raw Materials • Drug Design
4-7 Apply various principles to determine the characteristics of biopharmaceutical products	C11	<ul style="list-style-type: none"> • Toxicology-1 • Toxicology-2 • Pharmacotherapy
4-8 Select and assess appropriate methods of infection control to prevent infections and promote public health.	C12	<ul style="list-style-type: none"> • General Microbiology & Immunology • Pharmaceutical Microbiology • Biotechnology • Pathology and Parasitology • Toxicology-2 • Clinical Nutrition • Summer training
4-9 Utilize the pharmacological basis of therapeutics in the proper selection and use of drugs in various disease conditions.	C13	<ul style="list-style-type: none"> • Pharmacology-1 • Pharmacology-2 • Biotechnology • Toxicology-2 • Clinical Pharmacology • Clinical Nutrition • Summer training
4-10 Calculate and adjust dosage and dose regimen of medications	C14	<ul style="list-style-type: none"> • Biopharmaceutics & Pharmacokinetics • Community Pharmacy • Toxicology-2
4-11 Assess drug interactions, ADRs and pharmacovigilance.	C15	<ul style="list-style-type: none"> • Human Rights • Pharmacology-1 • Medical Microbiology • Toxicology-1 • Community Pharmacy • Clinical Pharmacology • Drug Design • Summer training
4-12 Apply the principles of pharmacoeconomics in promoting cost/effective pharmacotherapy	C16	<ul style="list-style-type: none"> • Accounting & business Administration
4-13 Analyze and interpret experimental results as well as published literature	C17	<ul style="list-style-type: none"> • Pharmaceutics-1 • Principles of Math. And Statistics • General Microbiology & Immunology • Histology and Anatomy • Pharmaceutical Microbiology • Biochemistry-1 • Biochemistry-2 • Medical Microbiology • Biotechnology • Clinical Biochemistry • Bioassay-1 • Bioassay-2 • Biotechnology of Natural Products

		<ul style="list-style-type: none"> • Pathology and Parasitology • Research Project
4-14 Analyze and evaluate evidence-based information needed in pharmacy practice.	C18	<ul style="list-style-type: none"> • Pharmacognosy-1 • Histology and Anatomy • Psychology • Phytochemistry-1 • Pharmacology-1 • Phytochemistry-2 • Toxicology-1 • Toxicology-2 • Applied Pharmacognosy-1 • Clinical Pharmacology • Research Project • Applied Pharmacognosy-2 • Pharmacotherapy
5-1 Communicate clearly by verbal and written means	D1	<ul style="list-style-type: none"> • English and Medical Terms • Pharmaceutical Microbiology-2 • Pharmacology-1 • Microbiology-3 • Biochemistry-2 • Microbiology-4 • Hospital and Clinical Pharmacy-1 • Clinical Biochemistry • Hospital and Clinical Pharmacy-2 • Pathology and Parasitology • Clinical Pharmacology • Quality Control of Drugs • Clinical Nutrition • Summer training
5-2 Retrieve and evaluate information from different sources to improve professional competencies	D2	<ul style="list-style-type: none"> • Botany and Medicinal Plants • Psychology • Physiology • Clinical Biochemistry • Bioassay-1 • Toxicology-1 • Toxicology-2 • Applied Pharmacognosy-1 • Medicinal Chemistry-3 • Applied Pharmacognosy-2 • Quality Control • Pharmacotherapy • Drug Design • Summer training
5-3 Work effectively in a team	D3	<ul style="list-style-type: none"> • Botany and Medicinal Plants • Human Rights • Analytical chemistry-3 • Pharmacognosy-1 • Pharmaceutical Organic Chemistry-3 • General Microbiology & Immunology • Psychology • Analytical chemistry-4 • Pharmacognosy-2 • Pharmaceutical Organic Chemistry-4 • Pharmaceutical Microbiology

		<ul style="list-style-type: none"> • Phytochemistry-1 • Pharmacology-1 • Biochemistry-1 • Production of Raw Materials • Phytochemistry-2 • Pharmacology-2 • Biochemistry-2 • Chromatography of Natural Products • Medicinal Chemistry-1 • Clinical Biochemistry • Toxicology-1 • Biotechnology of Natural Products • Medicinal Chemistry-2 • Toxicology-2 • Applied Pharmacognosy-1 • Medicinal Chemistry-3 • Clinical Pharmacology • Applied Pharmacognosy-2 • Medicinal Chemistry-4 • Quality Control • Clinical Nutrition • Drug Design • Summer training
5-4 Use numeracy, calculation and statistical methods as well as information technology tools	D4	<ul style="list-style-type: none"> • General and Physical Chemistry • Pharmaceutics-1 • Principles of Math. And Statistics • Pharmaceutics-2 • Pharmaceutical Organic Chemistry-4 • Biopharmaceutics & Pharmacokinetics • Sterile Products and Controlled Drug Delivery • Bioassay-2 • Industrial Pharmacy-1 • Clinical Nutrition • Drug Design
	D5	<ul style="list-style-type: none"> • Pharmacognosy-1 • Pharmacognosy-2 • Phytochemistry-1 • Pharmacology-1 • Biochemistry-1 • Production of Raw Materials • Phytochemistry-2 • Bioassay-1 • Toxicology-1 • Biotechnology of Natural Products • Pathology and Parasitology • Bioassay-2 • Toxicology-2 • Applied Pharmacognosy-1 • Clinical Pharmacology • Applied Pharmacognosy-2
5-5 Practice independent learning needed for continuous professional development	D6	<ul style="list-style-type: none"> • Pharmaceutics-3 • General Microbiology & Immunology • Pharmaceutics-4 • Pharmacology-1

		<ul style="list-style-type: none"> • Hospital and Clinical Pharmacy • Clinical Pharmacology • Clinical Nutrition • Summer training
5-6 Adopt ethical, legal and safety guidelines	D7	<ul style="list-style-type: none"> • Pharmaceutical Organic Chemistry-1 • Pharmaceutical Organic Chemistry-2 • Analytical chemistry-3 • Pharmaceutical Organic Chemistry-3 • Analytical chemistry-4 • Pharmaceutical Organic Chemistry-4 • Microbiology-3 • Production of Raw Materials • Biotechnology • Medicinal Chemistry-4 • Accounting & Business Administration • Summer training
5-7 Develop financial, sales and market management skills	D8	<ul style="list-style-type: none"> • Human Rights • Psychology • Accounting & Business Administration • Summer training
5-8 Demonstrate creativity and time management abilities	D9	<ul style="list-style-type: none"> • Pharmaceutical Organic Chemistry-1 • Pharmaceutical Organic Chemistry-2 • Analytical chemistry-3 • Pharmaceutical Organic Chemistry-3 • Analytical chemistry-4 • Pharmacognosy-2 • Pharmaceutical Organic Chemistry-4 • Biochemistry-1 • Production of Raw Materials • Medicinal Chemistry-4 • Summer training
5-9 Implement writing and presentation skills	D10	<ul style="list-style-type: none"> • General and Physical Chemistry • Botany and Medicinal Plants • English and Medical Terms • Pharmacognosy-1 • General Microbiology & Immunology • Histology and Anatomy • Analytical chemistry-4 • Pharmacognosy-2 • Pharmaceutical Organic Chemistry-4 • Pharmaceutical Microbiology • Physiology • Pharmacology-1 • Biochemistry-1 • Medical Microbiology • Production of Raw Materials • Phytochemistry-2 • Pharmacology-2 • Biochemistry-2 • Biotechnology • Medicinal Chemistry-1 • Clinical Biochemistry • Toxicology-1 • Medicinal Chemistry-2

		<ul style="list-style-type: none"> • Pathology and Parasitology • Bioassay-2 • Toxicology-2 • Medicinal Chemistry-3 • Clinical Pharmacology • Research Project • Quality Control • Clinical Nutrition • Pharmacotherapy • Summer training
5-10 Demonstrate critical thinking, problem-solving and decision-making abilities	D11	<ul style="list-style-type: none"> • Botany and Medicinal Plants • Pharmaceutics-1 • Analytical chemistry-1 • Principles of Math. And Statistics • Human Rights • Analytical chemistry-2 • Pharmacognosy-1 • Pharmaceutics-3 • Histology and Anatomy • Psychology • Pharmaceutical Organic Chemistry-4 • Pharmaceutics-4 • Biopharmaceutics & Pharmacokinetics • Phytochemistry-1 • Biochemistry-1 • Sterile Products and Controlled Drug Delivery Phytochemistry-2 • Biotechnology • Hospital and Clinical Pharmacy • Chromatography of Natural Products • Clinical Biochemistry • Toxicology-1 • Community Pharmacy • Biotechnology of Natural Products • Pathology and Parasitology • Toxicology-2 • Industrial Pharmacy-1 • Applied Pharmacognosy-1 • Research Project • Applied Pharmacognosy-2 • Clinical Nutrition • Pharmacotherapy • Summer training

- A : Knowledge and understanding.
 B : Intellectual skills.
 C : Professional and practical skills.
 D : General and transferable skills.

• **Strong points:**

1. All National Academic References Standards (NARS/2009) are covered by the courses

2. Presence of qualified staff members of different specialties
3. Continuous students assessment is conducted through midterm exam in the 7th week of the semester
4. The courses contents are regularly reviewed by the course instructors and updated according to the latest updates in pharmacy
5. Presence of different courses that acquire students background knowledge in pharmacy practice to cope with the shift of pharmacist job responsibilities, e.g. Hospital and Clinical Pharmacy, pharmacotherapy, community pharmacy, clinical biochemistry 1&2, clinical nutrition and others
6. Different teaching methods are used e.g. lectures, demonstration within labs, practical experiments and case studies
7. Some skills are developed through the courses activities such as problem-solving, presentation skills, time management, team work and others
8. Presence of research project for 5th year students to develop different research skills such as ability to retrieve information from different resources and scientific writing and others
9. Presence of 300 hours dedicated for summer training in which students should pass, so the students have the chance to apply knowledge in real field practice
- 10. Some Field visits** such as hospital pharmacy course (visit to the Zagazig University Hospital)

Measures done to ensure achievement of program aims:

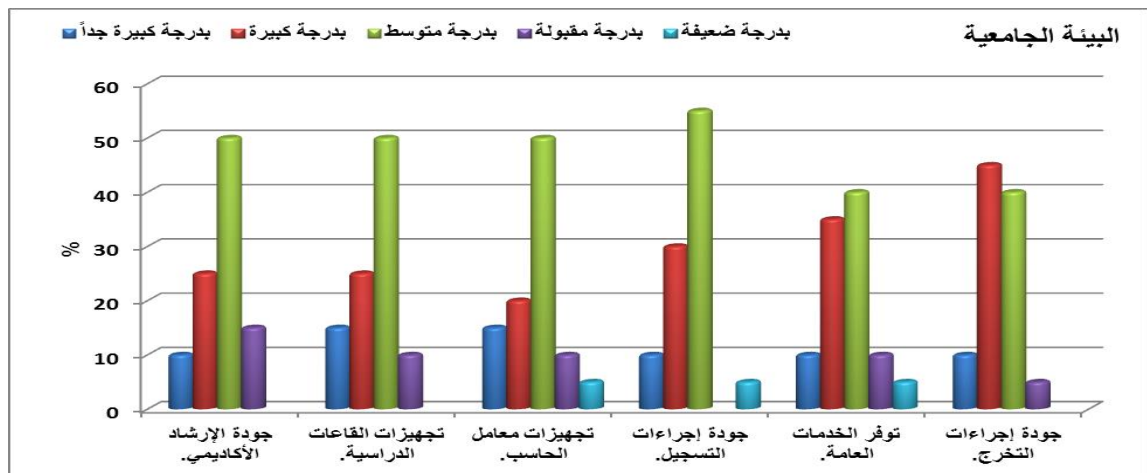
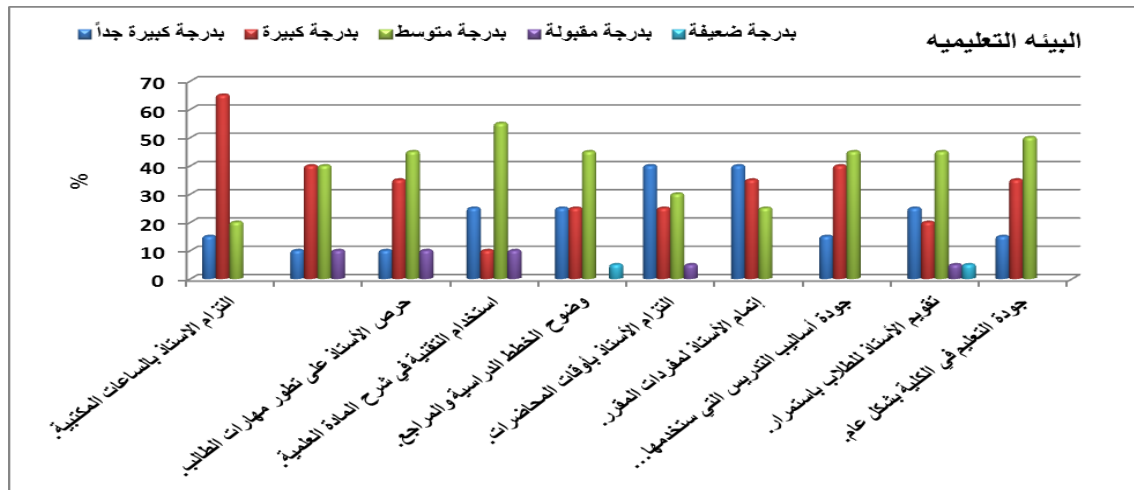
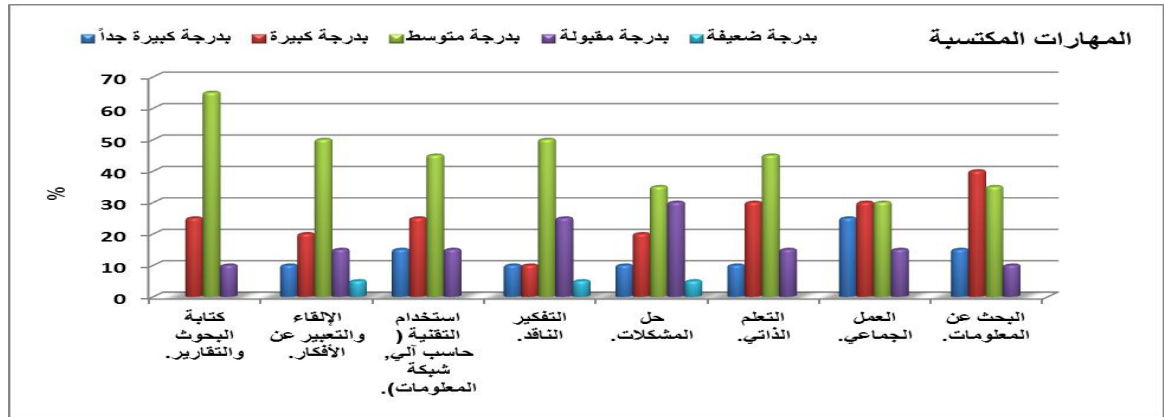
Achievement of program aim and objectives is assured through:

- Analysis of students results (course reports, statistics in section B of program report) which showed reasonable distribution of marks in individual courses as well as reasonable program completion rate (> 70%) and pass rates (> 80%).

Academic year	pass No	Fail No	Pass rates
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2018 - 2019	849	113	88.25%
2017 - 2018	811	40	95.3%

• *Graduates Satisfaction about the program:*



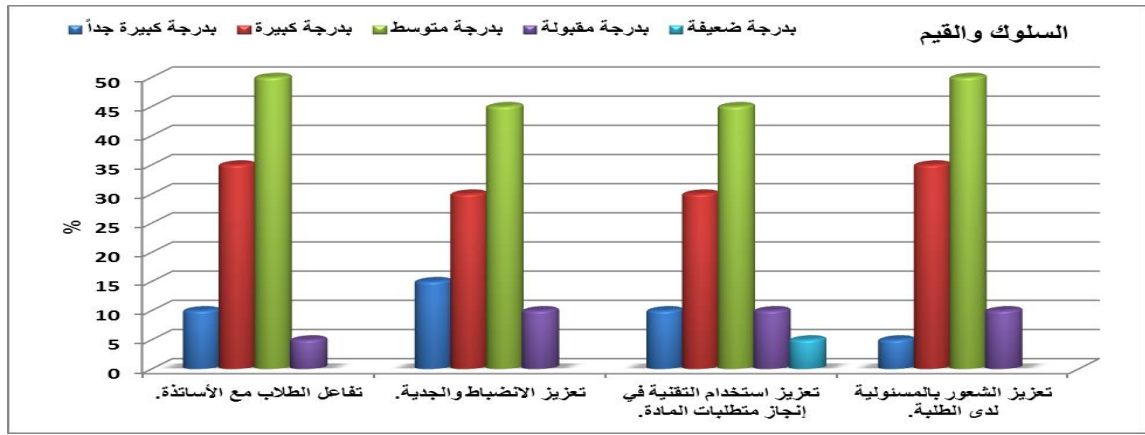


Fig. 3: Graduates satisfaction about the program.

Generally, graduates were satisfied about the quality of the program in terms of acquired skills through the program (report writing, critical thinking, team work, self learning, problem solving and others), learning environment (teaching and assessment methods and others), university environment (facilities and services) and attitude and values (staff interaction with students, commitment and others).

They recommended:

- Addition of clinical training in hospitals
- Orientation of students about different fields of future career and required qualifications
- Developing some skills such as communication and presentation skills
- ***Employer satisfaction about the quality of graduates:*** (6 responses)

Stakeholders were surveyed about the quality of the graduates, generally they were satisfied about the different items of the survey but they recommended to give more interest on Therapeutic and pharmacy practice courses.

2. Students evaluation to measure extent of ILOs achievement

Student Assessment Methods

ILOs	Method of achievement and assessment
Knowledge and Understanding Intellectual Skills	Written and oral Exam
Professional and practical Skills Intellectual Skills	Practical Exam Summer Training
Intellectual Skills	Oral Exam
General and Transferable Skills	Team Work Assignment Research project

Distribution of assessment marks

Course	Method of Assessment					Total
	Final written	Practical	Oral	Midterm	Assignment	
(3 theoretical hours)	75	30	20	15	10	150
(2 theoretical hours)	50	20	15	10	5	100
Biotechnology (2 theoretical hours)	75	-	20	5	-	100
Analytical chemistry ^{1,2} (1 theoretical hour)	30	10	10	-	-	50
Public health (1 theoretical hour)	30	10	10	-	-	50

Distribution of assessment marks for courses with no oral exam

Course	Method of Assessment		
	Final written	Practical	Midterm/assignment
English and medical terms	40	-	10
Math & statistics	40	-	10
Accounting and pharmaceutical business administration	40	-	10
Drug marketing and communication skills	80	-	20
Psychology	40	-	10
Human Rights	80	-	20
Anatomy & histology	35 + 35	10+10	5+5
Physiology	80	-	20
Elective course	70	20	10

3. Quality of learning opportunities

A-Quality of Teaching and Learning:

The impellers of the faculty teaching and learning strategy are based on:

1. Availability of appropriate learning environment through presence of good seated, air conditioned teaching halls and equipped with the required audio-visual aids. Laboratories are sufficiently equipped with the required instruments and chemicals necessary for conduction of the practical lessons.
2. Availability of learning resources through the preparation of course notes by staff members. In addition to, availability of the faculty library with a tremendous and diverse text books and references.
3. Flexibility of the lecture and exams schedules which are based on students' opinion.

4. Availability of the staff members through office hours which are known to the students.
5. Development of staff members' skills regarding teaching and assessment through arranging different training programs
6. Continuous updating and reviewing courses.
7. Development of different skills necessary for the future career such as problem solving, presentation, team work and time management through different course activities.
8. Encouraging outstanding students: Faculty offers appreciation certificates for the first three students. The highest score graduate is employed as a demonstrator in the faculty.
9. Field training: The program includes 300 hours of field training after 3rd and 4th year in different pharmacy settings. The faculty arranges different partnerships with pharmaceutical companies (Delta Pharm, EPICO) to save training opportunities for the students.
10. Use interactive teaching methods such as: case study, problem solving, demonstrative videos followed by group discussion.

B- Effectiveness of Student Support Systems:

- * **Course instructors** are available in office hours (4 hours/week) to guide students, guarantee effective communication, clarify any unclear points within the course and answer any questions related to the course.
- * **Students** receive feedback about their performance within the course and are notified with weakness areas that require improvement.
- * **Distinguished and talent students in all program levels** are identified and nominated by the faculty administration.
- * **Ministry of Higher Education (MOHE)** by laws states an annual financial support for distinguished students as follows:
 - **Students with excellent grades receive 120 LE**
 - **Students with very good grades receive 84 LE**

* **Financially needy students** receive financial social support from Solidarity Fund authority **as follows:** 150-200 LE per term; this may vary dependent on student status, student number and money available.

* **ICDL computer grant** is now available for all faculty students **200 LE**.

* **All students** are covered by health insurance in the different university hospitals and unlimited coverage.

* **The university housing** is available to all the university students from other governorates including pharmacy students as well, particularly for girls.

* The university restaurant provides the students with healthy reduced meals daily.

* Each student has the chance to participate in different cultural, sportive, artistic, social, ascetic and camping activities within the faculty or between faculties for distinguished or talented ones.

- Students relocation from and to the faculty depends on geographical distribution,

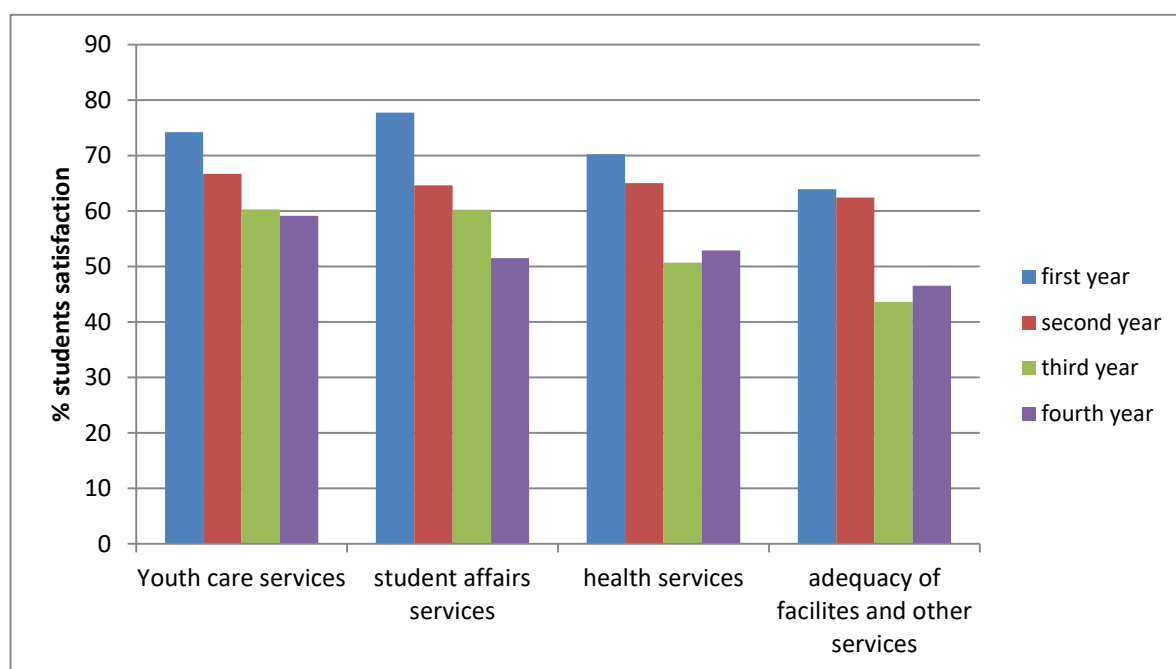


Fig.4: Students satisfaction about the adequacy of support services.

	Social funds	handout funds	students activities
Amount	156.210	42.450	36.000
Total = 234.660			

C. Learning Resources:

I. Number and ratio of Faculty members and their assistants to students:

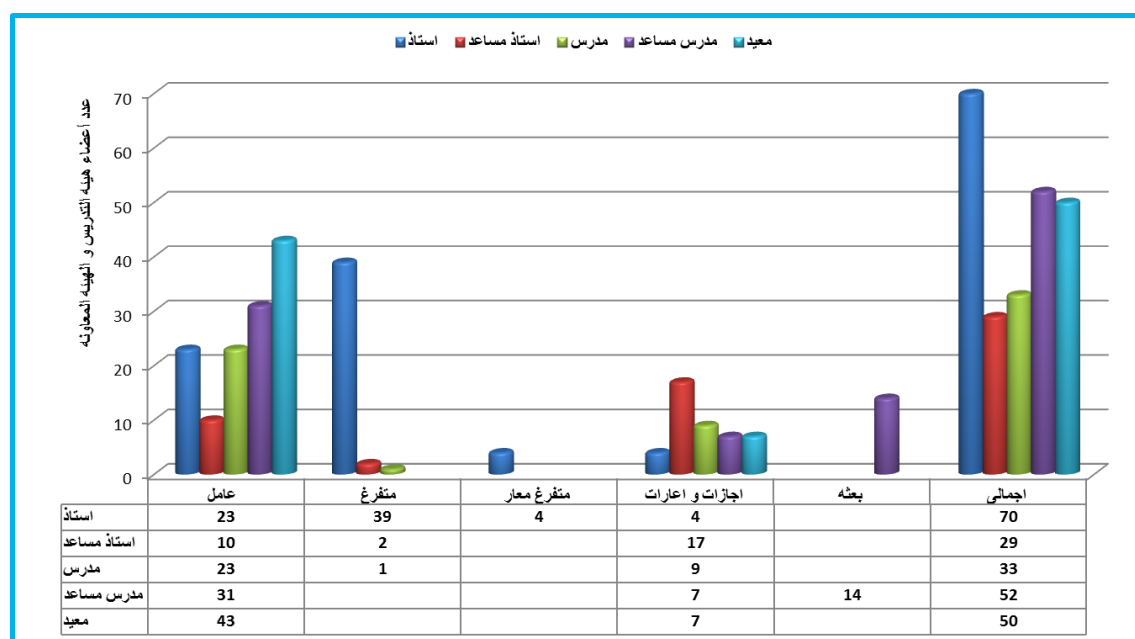


Fig.5: Total number of teaching staff members and assistants (2018-2019).

Teaching staff/assistants	No.	Students No.	Ratio
Pharmacy teaching staff	98	4887	50:1
Pharmacy + external teaching staff	114		43:1
Assistants	74		66:1

II. Adequacy of the specialties of the faculty members to the requirements of the program:

The specialties of the faculty members of all departments are adequate for the requirements of the program. Each department teaches courses relevant to its own specialty. In addition to presence of staff

members from the Faculty of Medicine, Commerce, Science, Law and Education to teach medical, social and behavioral courses.

III. Availability and adequacy of courses handouts.

In fact, all courses handouts are available for most of students (in different levels) containing courses intended learning outcomes and student assessment methods as well. Likewise, a student guide is available for the newly admitted students in the students affairs and youth care office, describing the infra structure of the college, structure and location of each department, faculty members, faculty facilities, admission policies, student support system as well as the different faculty activities and achievements.

The results of students' satisfaction about courses handouts are demonstrated below.

First year: Pharmaceutical organic chemistry 1 has the lowest satisfaction (< 50%)

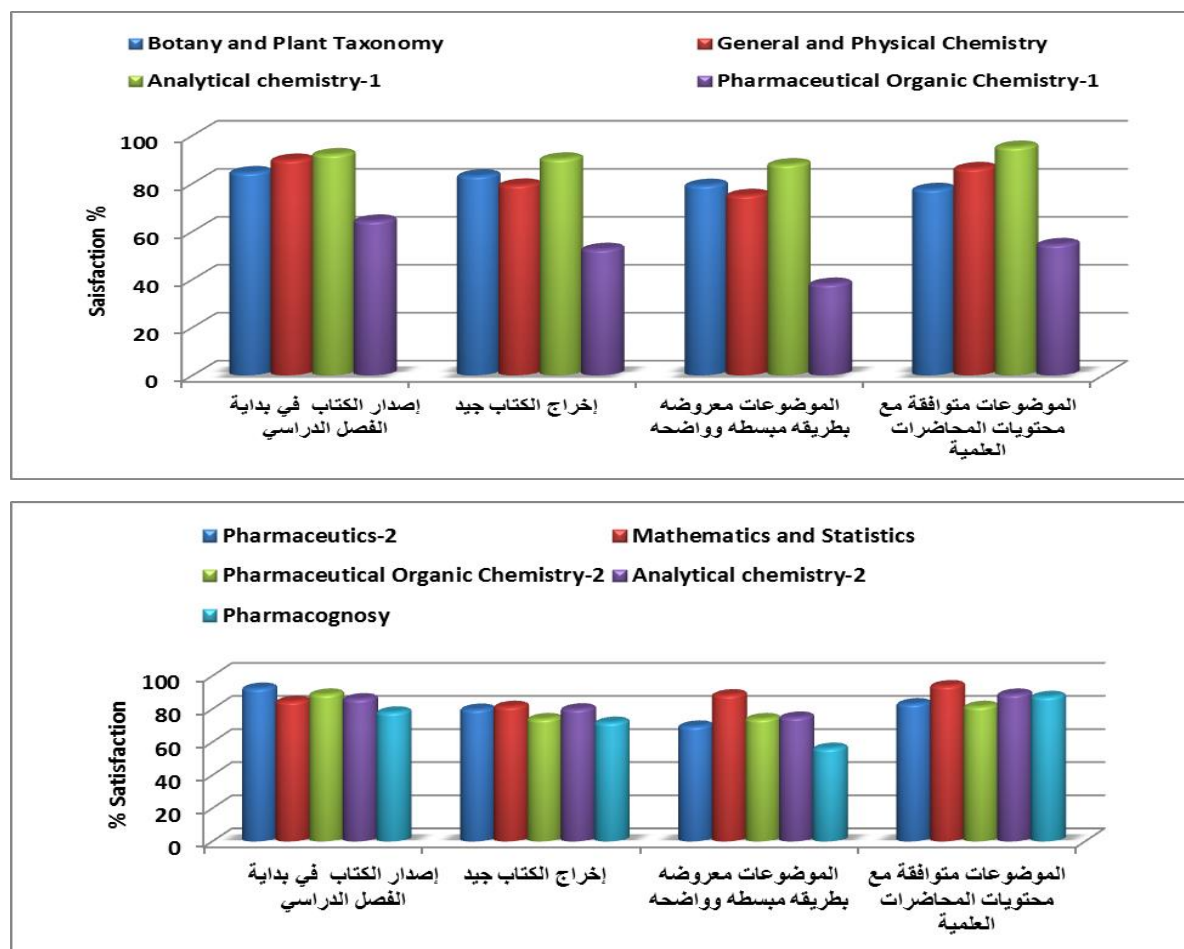


Fig.6: first year Students satisfaction about courses handouts.

Second year: high satisfaction ($\geq 80\%$)

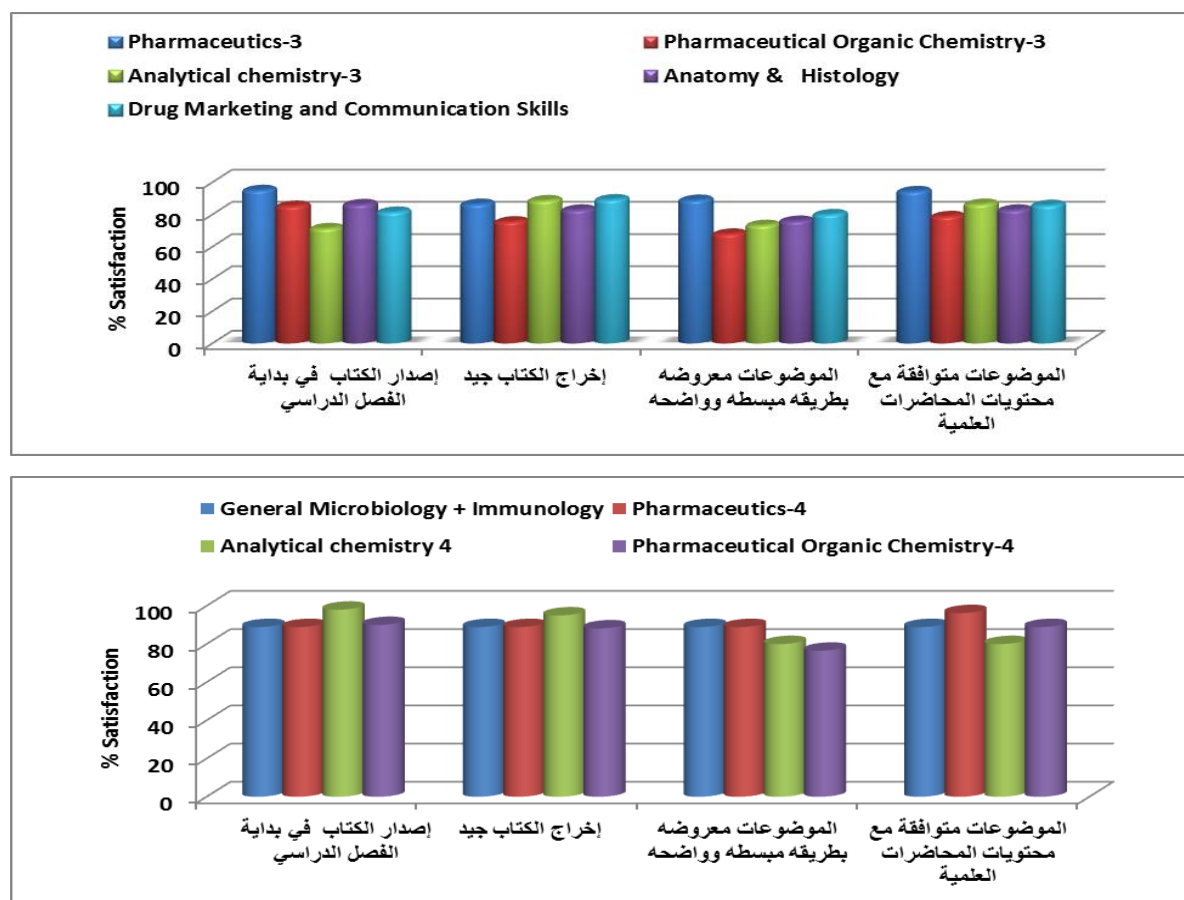
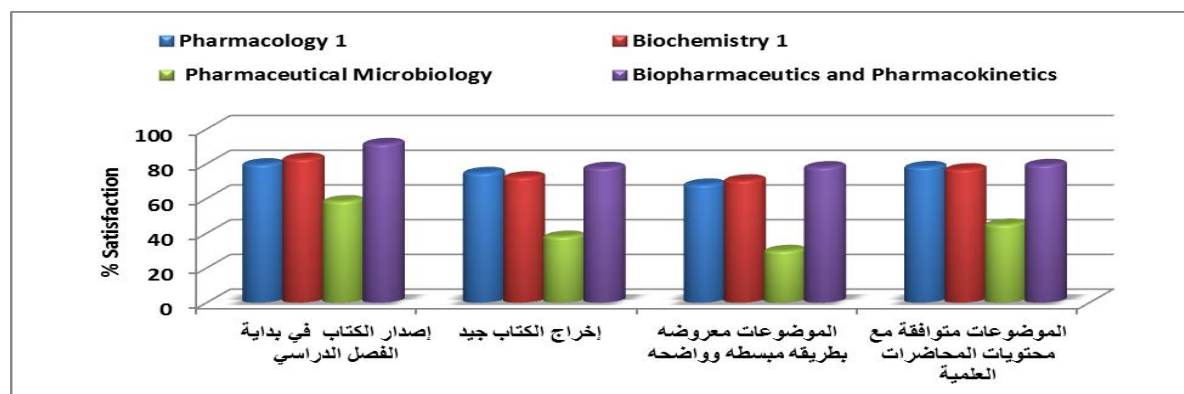


Fig.7: Second year Students satisfaction about courses handouts.

Third year: Pharmaceutical microbiology has the lowest satisfaction ($< 50\%$)



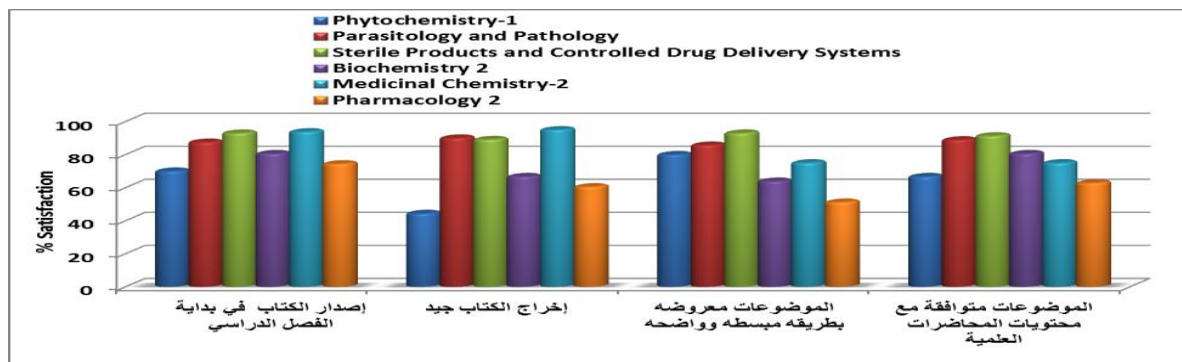


Fig.8: Third year Students satisfaction about courses handouts.

Fourth year: Phytochemistry 2 has the lowest satisfaction (< 50%)

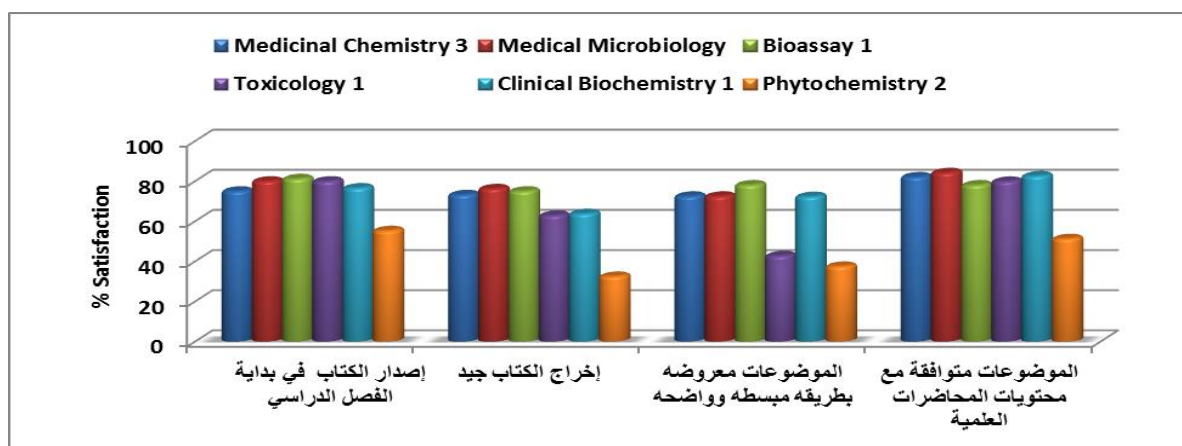
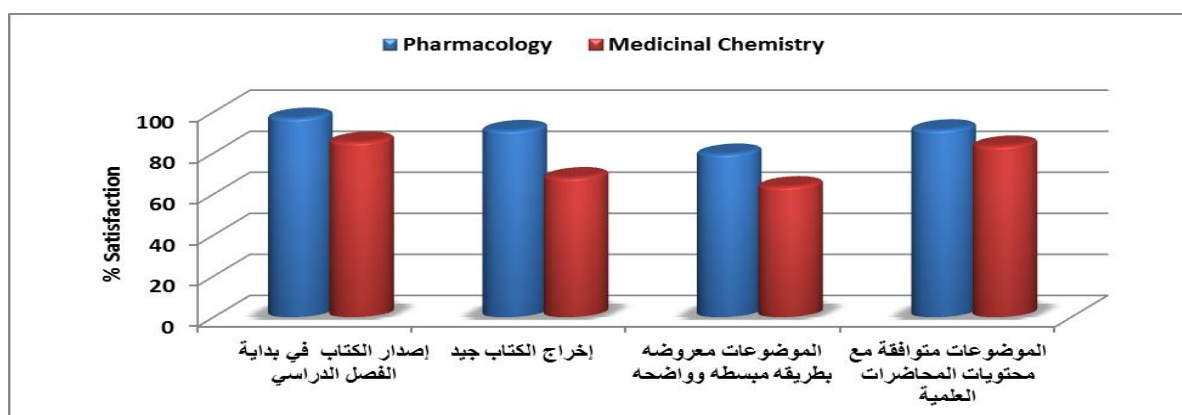


Fig.9: Fourth year Students satisfaction about courses handouts.

Fifth year: Pharmacy administration has the low satisfaction (< 50%)



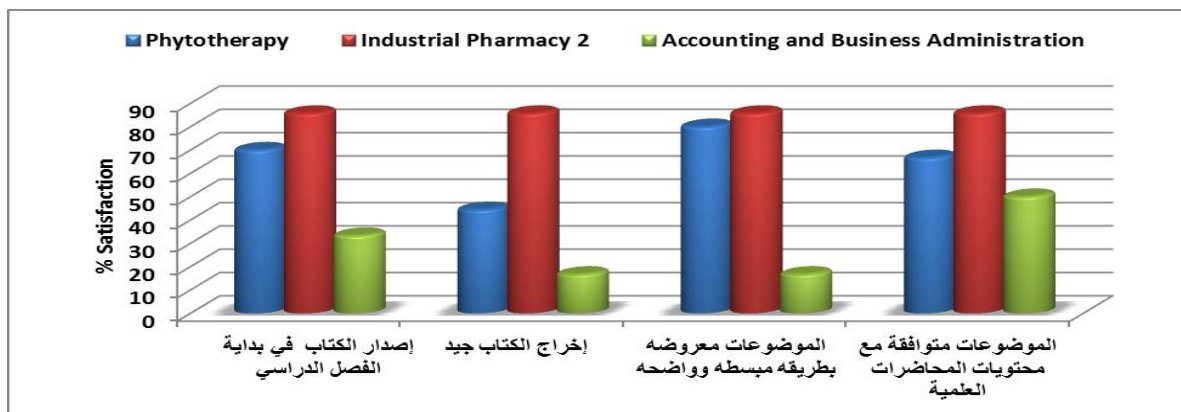


Fig. 10: Fifth year Students satisfaction about courses handouts.

IV. Adequacy of library facilities.

The Library Facilities;

Library Halls

A-The Library is located at the third floor in the administration building.

The space is around 283 m², **divided into 4 halls:**

- i- The largest hall (96 m²) is allocated for undergraduate students
- ii- The faculty and staff hall (periodical and thesis)
- iii- One room for photocopying.
- iv- One room for internet service (electronic library).

The Library Facilities: updated

Library is provided with:

- i-12 tables and 139 seats with adequate illumination and air conditions.
- ii- Two photocopying machines, one scanner.
- iii- 30 computers with 11 printers.

Working hours: The library opens from 9 a.m. to 4 p.m. daily during semester's time and from 9 a.m. to 2 p.m. on Saturday.

Library collection: The library contains:

- i- Almost **6355** English and **2264** Arabic textbooks in different specialties of pharmacy.
- ii- **68** periodicals, **5666** English volumes and **400** Arabic issues.
- iii- **1081** Master and PhD thesis

Library services

1-Photocopying

There is a photocopying unit available for all the students.

2-Internet services

The internet facility is introduced and available for students. E-library is connected to Zagazig university library, other Egyptian libraries and international scientific research engines e.g. research gate.

Evaluation of library services by both staff members and students revealed about 80 – 100% satisfaction

The library budget

	2016-2017	2017-2018	2018-2019
Budget in Egyptian pounds	18,000	26,000	16.000

V. Laboratories and teaching halls:

- i- Each department has a number of laboratories (Total = 25) that are equipped with the necessary equipment, glassware and chemicals suitable for conducting the practical sessions of each department.
- ii- The infrastructure of each laboratory is suitable, the area capacity about 126 square meters; each lab. is provided with 4 - 7 working benches; six large windows; 3 - 5 vacuum ventilation fans; two sets of fire extinguisher and first aid kit.
- iii- The average number of students per lab is 30-40.
- iv- The faculty has 6 teaching halls (4 of them are air conditioned), well seated, lighted and aeriated. They are equipped with data shows and sound systems.

VI. Educational Pharmacy:

- The faculty has one educational pharmacy of 25 students capacity, equipped with a refrigerator, white board and a data show. The pharmacy

has samples of all groups of medicines, supplies and large volume parentals. It is used in teaching community pharmacy course.

VII. Adequacy of computer facilities:

- The faculty has an e-library containing 30 computers with 13 printers.
- The faculty is about to establish a drug design lab
- The faculty is planning to establish a computer lab to be used for the practical sessions of Information Technology course.

VIII. Adequacy of Field / Practical Training Resources.

As mentioned before, the structure of the program includes about a mandatory 300 hours summer training in pharmaceutical companies, private pharmacies, or other pharmaceutical institutions. The summer training is divided into two academic years (after the third & fourth year) and is under the faculty supervision to insure its value and effectiveness. Although there is a process controlling the summer training in which each supervisor has an assigned group of about 20 students, the effectiveness of the summer training is variable. By surveying students about their experience in the training period they recommended the organization of an orientation for the students before training and this will be considered.

3. Quality Management.

a. Quality of teaching:

The quality of teaching and learning was evaluated at the end of each semester through questionnaires directed to students in all academic levels. Questioners measure student satisfaction about the courses structure and contents, quality of courses handouts and appropriateness of final exams questions. Departments are informed by the questioners' results for corrective actions when necessary.

First Year: Pharmaceutical organic chemistry 1 had lowest satisfaction (< 50%)

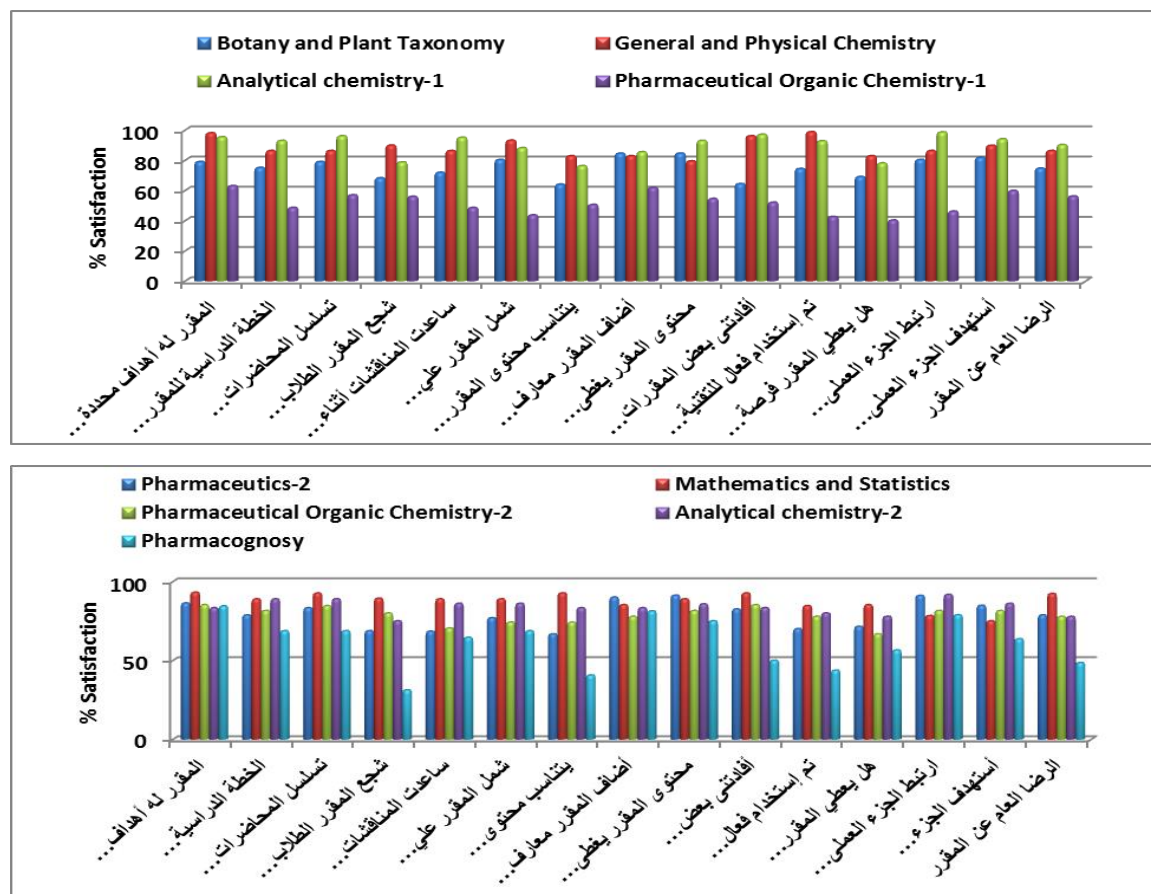
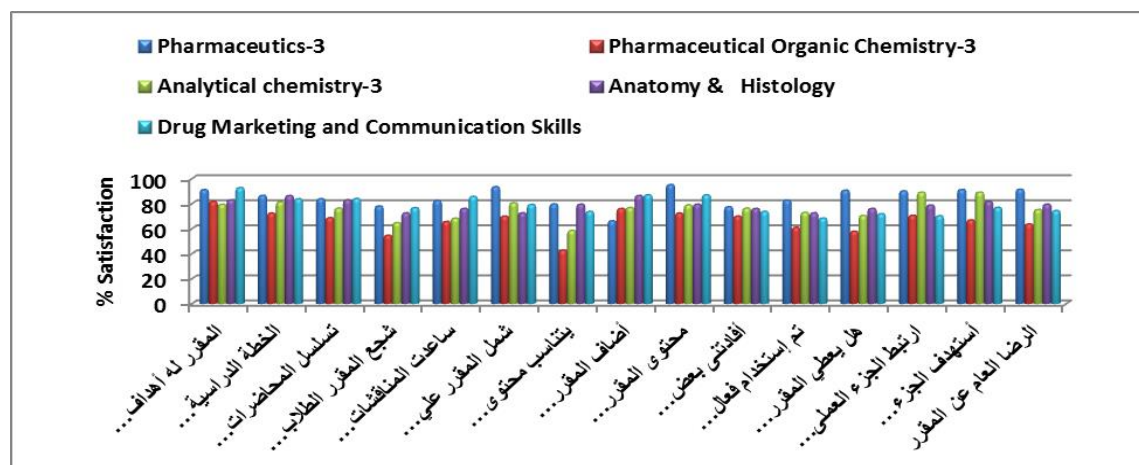


Fig.11: First year students’ satisfaction about 1st and 2nd term courses.

Second year: appropriate satisfaction (60 – 80%)



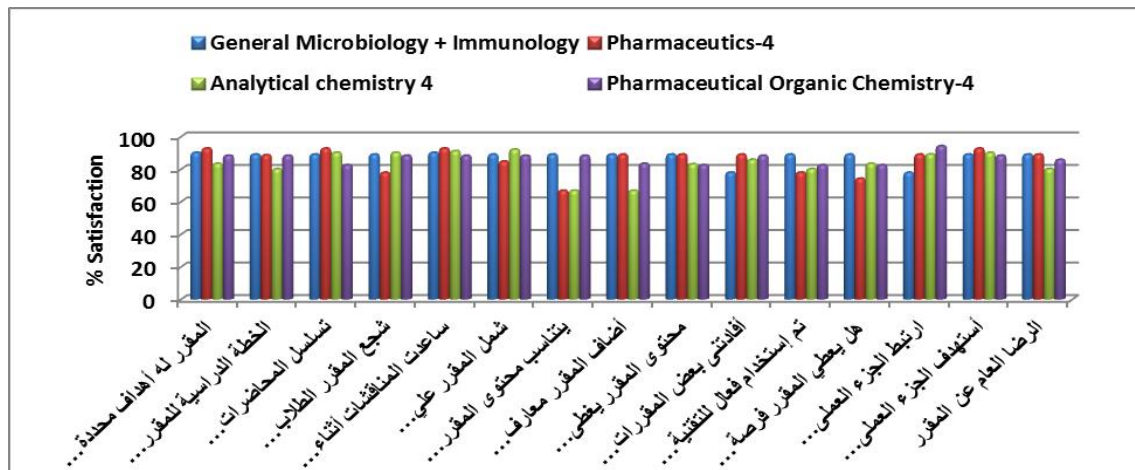


Fig.12: Second year students' satisfaction about 1st and 2nd term courses.

Third year: Pharmaceutical microbiology had the lowest satisfaction (< 50%) and they complained from pharmacology 2 due to large content.

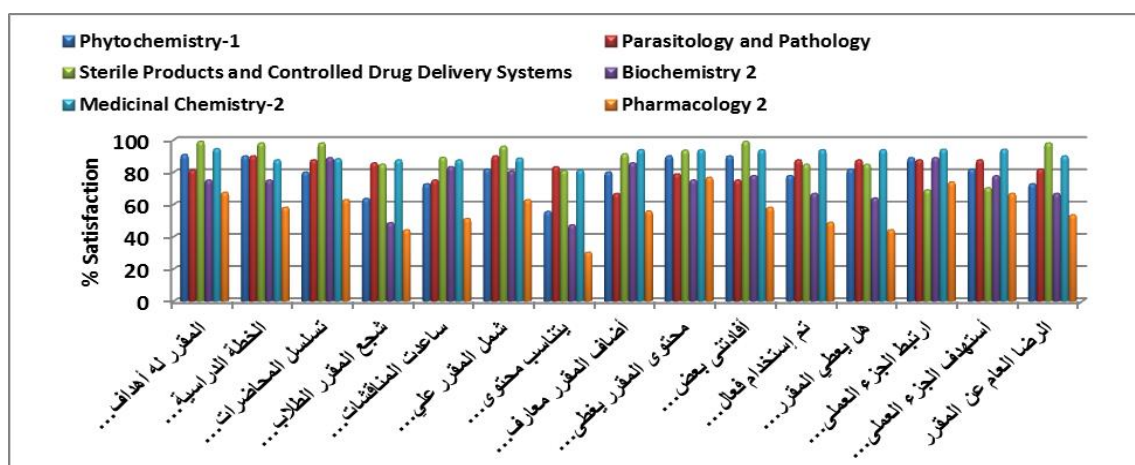
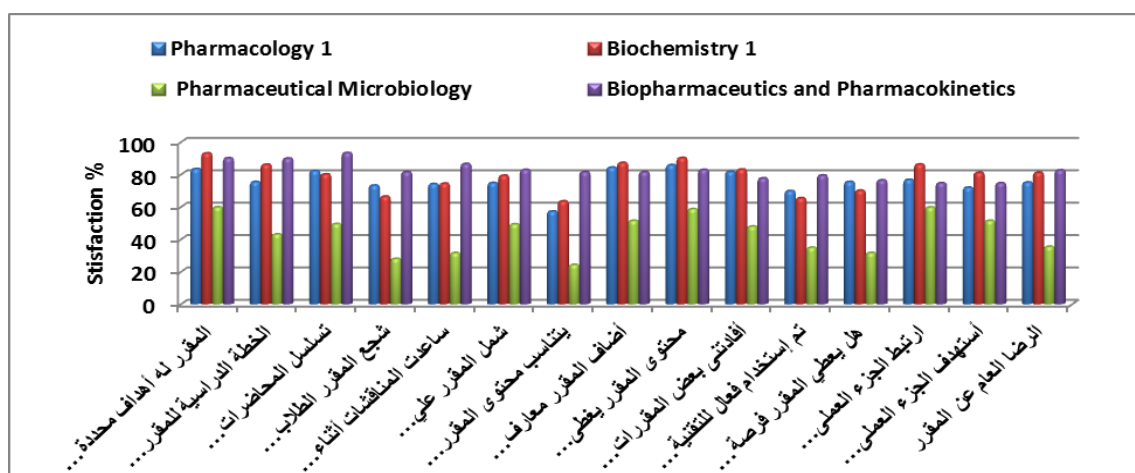


Fig.13: Third year students' satisfaction about 1st and 2nd term courses.

Fourth year: They complained from high content of toxicology 1

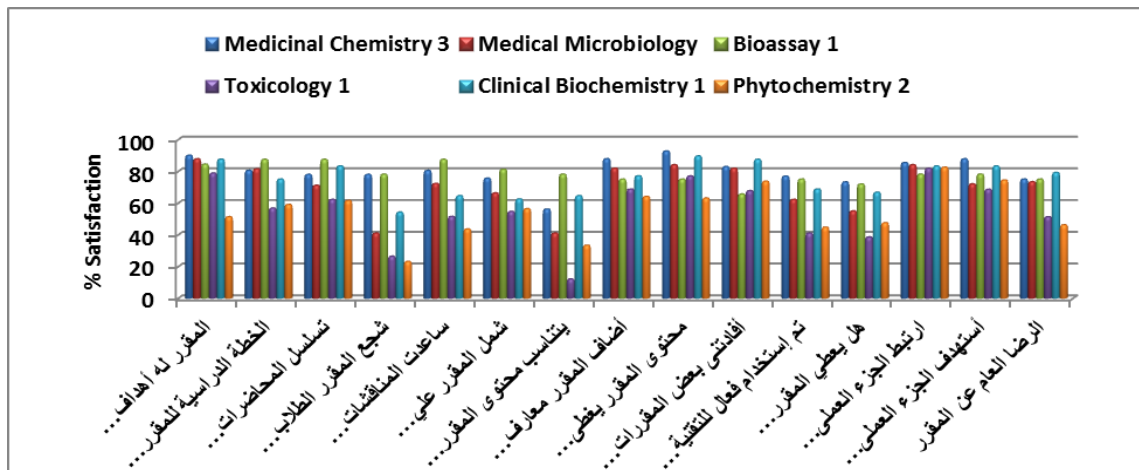


Fig.14: Fourth year students' satisfaction about 1st term courses

Fifth year: Pharmacy administration had the lowest satisfaction (< 50%)

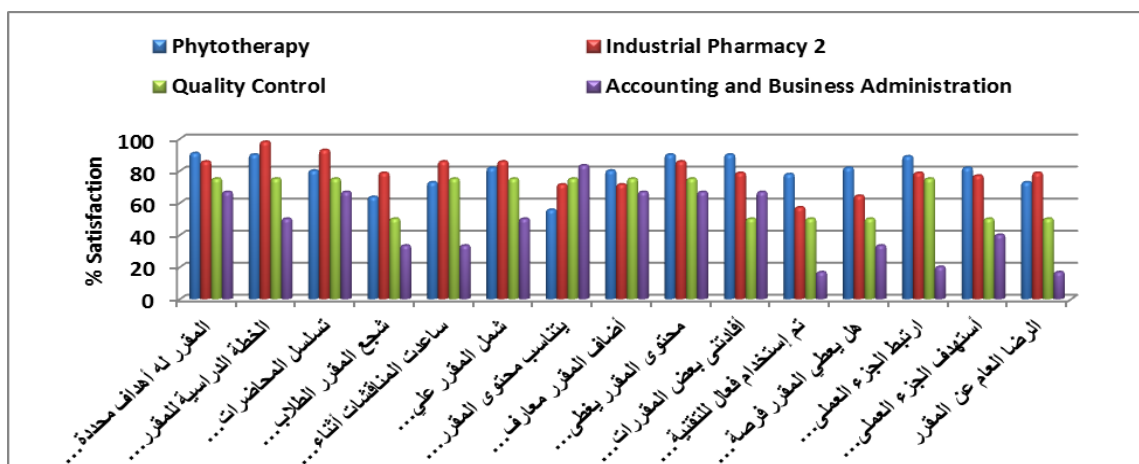
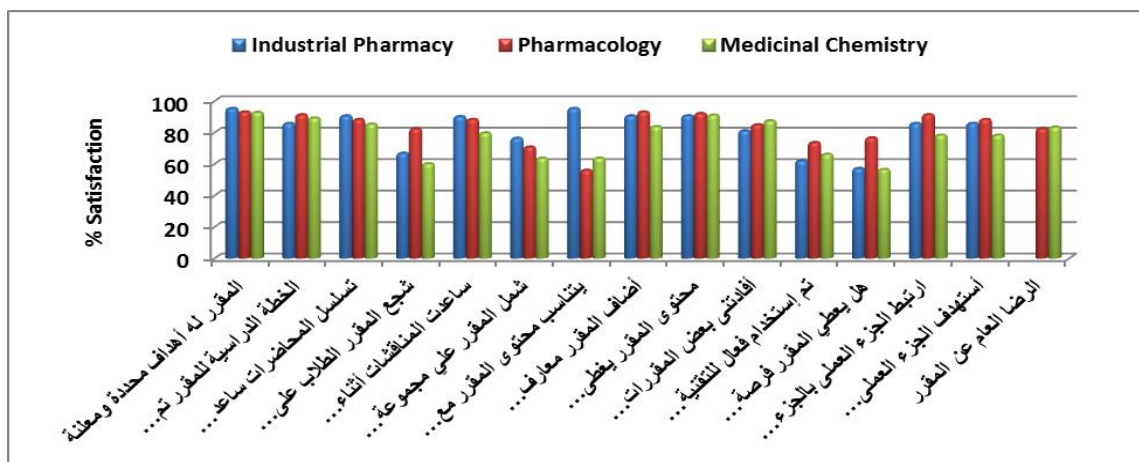


Fig. 10: Fifth year students' satisfaction about 1st and 2nd term courses.

b. Availability of regular evaluation and revision system for the program:

Program evaluation systems include the following:

1-External evaluation for program

2-Internal evaluation for program

Comment of internal evaluator	Comment of external evaluator
<ul style="list-style-type: none"> • The program is in compliance with the faculty's mission and NARS. • The program goals are compatible with the graduate attributes and the job market needs. • Program and course specifications are in accordance with available job opportunities locally and regionally. • The absolute necessity of increasing pharmacy practice courses at the expense of pharmacognosy, medicinal plants and organic chemistry courses that are overrepresented in comparison with many International universities. • There is no practical specification of the research project. 	<ul style="list-style-type: none"> • The program aims are defined and are in compliance with the faculty mission • The program ILOs are in compliance with the program aims and are covered through the courses • A13 and A35 are similar in meaning • Re-phrasing of some program aims • Application of modern teaching methods to achieve the required competencies 2017. As well as modern assessment such as student portfolio • Induction of some new courses to the program such as: <ul style="list-style-type: none"> ✓ Pathophysiology ✓ Bioinformatics ✓ Radiopharmaceuticals ✓ Pharmacoeconomics ✓ Pharmacovigilance ✓ Genomics ✓ Entrepreneurial skills

c- **Curriculum committee** headed by the Vice-Dean for education and students affairs, and includes different departments representatives in addition to the manager of quality unit.

The committee demonstrated the following achievements:

- i. Revision of the program specification, according to the newly published NARs, 2017 for pharmacy education.
- ii. Preparation of a proposal for adding to new elective courses:
 - Entrepreneurship and Business Development
 - Human Resource Strategies for Innovation
- iii- Evaluation by stakeholders: graduates and employers (results of surveys were mentioned earlier)
- iv. Evaluation by 5th year students: **they recommended:** revision and update of the program and remove any repetition in courses, put strategies to overcome student absence in lectures and laboratories development.

d- Effectiveness of the system.

Administrative constrains for achievement of program ILOs include:

- 1-Increasing number of students
- 2-Staff / student ratio is inadequate

Measures done to overcome these obstacles:

- Training sessions are regularly held to enhance the faculty potentials to apply new teaching and assessment strategies that would encourage developing higher skills and maintain life long education.
- Effectively classify student into groups (500 student in lecture halls and 40 student / lab) to meet the increasing number of students.
- Development and maintenance of the infrastructure of the faculty to meet the steadily increasing number of students.

e-Effectiveness of Faculty and University Laws and Regulations for Progression and Completion.

- The system effectively supports the students in every year and levels in a manner that fairly facilitates the progression and completion of the degree.
- Administrative and academic leader members apply the rules regarding student attendance percentage and staff member performance (course specification, and report).

f. Faculty Response to Students and External Evaluations:

- Students feedback about the quality of courses were directed for the heads of the departments to be discussed during the department minutes and take corrective actions when necessary
- Students feedback about the quality of support services were reported to the administration
- The faculty is continuously enhancing and developing the teaching aids by introducing and installing several data shows, computers, maintenance of microscopes and ordered more microscopes (under processing).
- The faculty has already connected the internet to the different departments and the library to facilitate using search engines during the practical and theoretical sessions.
- The faculty is preparing a new program (Bachelor of pharmacy, PharmD) that will be implemented by 2019-2020.
- Pharmacology department established a simulation lab.

4. Proposals for Programme Development.

Responding to:

1. external reviewer comments
2. Study of a gap analysis between academic standards 2017 for pharmacy education issued by NAQAAE and the program outcomes
3. Employer comments regarding students clinical knowledge and skills as well as students and graduates surveys.

The faculty administration decided to shift to the pharm D (credit hours) program from the academic year 2019-2020:

- Study duration = 5 + 1 (one year of training)
- add 4 elective courses instead of two courses
- The program will have 5 non- professional courses (7credit hours) to enhance student skills: Information Technology, Mathematics, Scientific Writing and Communication Skills, Scientific Writing and Communication Skills, Marketing & Pharmacoeconomics
- Add some new courses: Clinical Pharmacokinetics, Clinical Research and Pharmacovigilance, Drug information.
- Add at least one clinical rotation in the 6th year to develop students clinical skills in addition to presence of clinical elective courses.

5. Staff development requirements

1- Studying Staff training needs results in the followings:

- Writing Learning outcomes
- Strategic planning
- Interactive teaching methods
- Communication skills
- Management and leader skills
- Critical Thinking skills
- Preparation of Course specification and report

2- List of attended workshops by the staff members and assistants during 2018 – 2019:

Workshop	Number of attendees
Time and Meetings management	5
International Publishing of Scientific Researches	25
Using Technology in Education	7
Strategic planning	7
Credit hours	5
How to launch a research project	5
Quality management in healthcare	1

Communication skills in teaching	10
Exam systems and students evaluation	6
Creative Thinking skills	2
Decision making and problem solving	2
Management and organization of scientific conferences	1
Crisis management	2
Effective academic writing by nature research academics, National training institute, Cairo	1
Clinical pharmacogenomics research internship, Aquilante lab, Skaggs school of pharmacy and pharmaceutical sciences, university of Colorado, Denver, Anschutz medical campus, USA	2
Quality in research: from research topic identification to publishing, National training institute, Cairo	1
Statistical analysis (SPSS)	10
Critical appraisal	3
Scientific Writing and Reference Management by " Endnote"	19
MI-CIT, Online (E-learning) by MKCL	8
Basics of bioinformatics	6
Ethics of scientific research	9
Manage a research team	2
Effective presentation skills	8
financial and law aspects in university	1

6. Action plan:

Action	Person responsible	Completion date
Revision and update of the program	<ul style="list-style-type: none">• Vice dean for education and students affairs• Quality unit• Staff members	beginning of the academic year 2019-2020
Professional training for staff members	<ul style="list-style-type: none">• Quality unit• FLDP center in Zagazig university	Annual
Revision of course specifications and course reports	<ul style="list-style-type: none">• Quality unit	Annual
Program evaluation by different stakeholders: graduates & employers	<ul style="list-style-type: none">• Quality unit	Annual
Development of soft skills required for future career in students through Organization of the first career guidance	Faculty administration	2019-2020
increase the number of microscopes in pharmacognosy and microbiology laboratories	Faculty administration	2019-2020
Establishment of simulation lab in pharmacology department	Faculty administration Pharmacology department	2019-2020
Organization of students orientation before field training	Faculty administration	2019-2020
Increase the number of partnerships with pharmaceutical companies	Faculty administration	2019-2020

Appendix 1

The following is the programme structure, previously described and submitted in the programme specification.

الفرقة الأولى - الفصل الدراسي الأول

Course code	Course title	No. Of hours per week			PROGRAM ILO'S COVERED
		Lect	Pract.	Total	
AC110	Analytical chemistry-1	1	2	2	A1, A11, A12,B2, B4, C6, D7
OC110	Pharmaceutical Organic Chemistry-1	2	2	3	A1,A15,B2, B5, C6,D7
GC110	Botany and Plant Taxonomy	2	2	3	A3,C6
AC111	General and Physical Chemistry	2	2	3	A1, A9, B2, D7
PC110	Pharmaceutics-1	2	2	3	A2,A12, A36, B1, B2, B4, C1,C11,D6,D7
EL110	English and Medical Terminology	1	-	1	A2,B1, D1
	Total	10	10	15	

جدول رقم (2) : الفرقة الأولى - الفصل الدراسي الثاني

Course code	Course title	No. Of hours per week			PROGRAM ILO'S COVERED
		Lect	Pract.	Total	
AC122	Analytical chemistry-2	1	2	2	A1, A11, A12,B2, B4, C6, D7
OC121	Pharmaceutical Organic Chemistry-2	2	2	3	A1,A15,B2, B5,C6,D7
GC121	Pharmacognosy 1	3	2	4	A2, A3,A12,B2, B4,C4, C6,
PC121	Pharmaceutics-2	2	2	3	A2, A9, B2,C1, D6, D7
MS120	Mathematics and Statistics	1	-	1	A1, B1, C14, D4,
IR120	Human Rights and Professional Ethics	2	-	2	A5, A8, A38, C15, D1, D2, D7
	Total	11	8	15	

جدول رقم (3): الفرقة الثانية الفصل - الدراسي الأول

Course code	Course title	No. Of hours per week			PROGRAM ILO'S COVERED
		Lect	Pract.	Total	
'C213	Analytical chemistry-3	2	2	3	A1, A11, A12,B2, B4, C6, D7
'OC212	Pharmaceutical Organic Chemistry-3	2	2	3	A1,A15,B2, B5,C6,D7
'G212	Pharmacognosy 2	2	2	3	A2, A3,A12,B2, B4,C4, C6,
'C212	Pharmaceutics-3	2	2	3	A2, A16, A17, B2, B3, C1, C2, D6, D7
'ID210	Anatomy & Histology	2	1	2	A4
'M21	Drug Marketing and Communication Skills	2	-	2	A5, A6, D1, D2, D9, D10,
	Total	12	9	17	

جدول رقم (4) : الفرقة الثانية - الفصل الدراسي الثاني

Course code	Course title	No. Of hours per week			PROGRAM ILO'S COVERED
		Lect	Pract.	Total	
'C224	Analytical chemistry 4	2	2	3	A1, A11, A12,B2, B4, C6, D7
'OC223	Pharmaceutical Organic Chemistry-4	2	2	3	A1,A15,B2, B5,C6,D7
'C223	Pharmaceutics-4	2	2	3	A2, A9, A16, A17,A38, B2, B3, C1, C2, C5, D6, D7
'II22	General Microbiology + Immunology	3	2	4	A2, A4, A27, B2, B6, B7, B8, C9, D7
'T220	Physiology	2	-	2	A4, A24, B1, C10, D6,
'S220	Psychology	1	-	1	A5, C15, D1, D2, D3, D11
	Total	12	8	16	

جدول رقم (5) : الفرقة الثالثة الفصل- الدراسي الأول

Course code	Course title	No. Of hours per week			PROGRAM ILO'S COVERED
		Lect	Pract.	Total	
PC314	Biopharmaceutics and Pharmacokinetics	2	2	3	A2, A9, A19, D6
PG313	Chromatography of Natural Products	2	2	3	A12, B1, B4, C6, D3, D7
PT312	Pharmacology 1	3	2	4	A2, A4, A29, A30, B2, B6, C10, C12, D6, D7
BC310	Biochemistry 1	2	2	3	A2, A4, A25, B2, B8, B9, C6, D3, D7
MC310	Medicinal Chemistry-1	2	2	3	A2, A15, B2, B5, C6, D6, D7
MI311	Pharmaceutical Microbiology	2	2	3	A2, A18, A22, A23, B2, B7, C3, C9, D7
	Total	13	12	19	

جدول رقم (6) : الفرقة الثالثة – الفصل الدراسي الثاني

Course code	Course title	No. Of hours per week			PROGRAM ILO'S COVERED
		Lect	Pract.	Total	
PC325	Sterile Products and Controlled Drug Delivery Systems	2	2	3	A15, A17, A18, B2, B3, B5, C1, C2, C4, C5, D6, D7
PG324	Phytochemistry-1	2	2	3	A2, A12, B2, B4, C6, , D3, D6, D7
PT323	Pharmacology 2	2	2	3	A2, A4, A29, A30, B2, B6, C10, C12, D6, D7
BC321	Biochemistry 2	3	2	4	A2, A4, A25, B2, B8, B9, C6, D3, D7
MI322	Parasitology and Pathology	2	1	2.5	A4, A24, A27, A28, B2, B6, B7, B8, C9, D7
MC321	Medicinal Chemistry-2	2	2	3	A2, A15, B2, B5, C6, D6, D7,
	Total	13	11	18.5	

جدول رقم (7) : الفرقة الرابعة – الفصل الدراسي الأول

Course code	Course title	No. Of hours per week			PROGRAM ILO'S COVERED
		Lect	Pract.	Total	
P415	Phytochemistry 2	2	2	3	A2, A12, B2, B4, C6, , D3, D6, D7
C412	Clinical Biochemistry 1	2	2	3	A2, A4, A24, A25, A28, B2, B8, B9, C6,D3, D7
T414	Bioassay 1	2	2	3	A2, A31, A35, B4, C6, D6, D7
T415	Toxicology 1	2	2	3	A2, A7, A8, A33, B11, C10, D6
C412	Medicinal Chemistry 3	2	2	3	A2, A15, B2, B5, C6, D6, D7
M413	Medical Microbiology	3	1	3.5	A2, A4,A27, A28, B2, B6, B7, B8, C9, D6, D7
Total		13	11	18.5	

جدول رقم (8) : الفرقة الرابعة – الفصل الدراسي الثاني

Course code	Course title	No. Of hours per week			PROGRAM ILO'S COVERED
		Lect	Pract.	Total	
P420	Hospital Pharmacy and Clinical Pharmacy	2	1	2.5	A8, A20, A37, B2, B3, C1, C11, C15, D1, D3, D6, D7, D9, D11
G426	Biotechnology of Natural Product	2	2	3	A10, A26,B5, C6, C8, D3, D6, D7
C423	Clinical Biochemistry 2	2	2	3	A2, A4, A24, A25, A28, B2, B8, B9, C6,D3, D7
T426	Bioassay 2	2	2	3	A2, A31, A35, A36, B4, C6, D6, D7
T427	Toxicology 2	2	2	3	A2, A7, A8, A34, B10, C10, D6
C423	Medicinal Chemistry 4	2	2	3	A2, A15, B2, B5, C6, D6, D7
M424	Biotechnology	2	-	2	A2, A10, A15, B2, B5, C6, C8, D6, D7
Total		14	11	19.5	

جدول رقم (9) : الفرقة الخامسة – الفصل الدراسي الأول

Course code	Course title	No. Of hours per week			PROGRAM ILO'S COVERED
		Lect	Pract.	Total	
PP511	Community Pharmacy	2	1	2.5	A8, A21, A36, A37, B13, C15, D1, D3, D6, D7, D9, D11
PC516	Industrial Pharmacy 1	2	1	2.5	A2, A15, B12, C1, D7
PG517	Applied Pharmacognosy	2	2	3	A2, A12, B2, B5, C6, D3, D6, D7,
PT518	Clinical Pharmacology	3	2	4	A2, A4, A31, B6, C10, D3, D6, D7
	Elective 1	1	2	2	
PT519	Pharmacotherapy	2	2	3	A4, A29, B2, B6, C10, C12, C13, D6, D7
MI515	Public Health	1	1	1.5	A7, A21, B2, B7, B13, B14, C9, D3, D6, D7
	Total	13	12	18.5	

جدول رقم (10) : الفرقة الخامسة – الفصل الدراسي الثاني

Course code	Course title	No. Of hours per week			PROGRAM ILO'S COVERED
		Lect	Pract.	Total	
PC527	Industrial Pharmacy 2	2	1	2.5	A2, A15, B3, B12, C1, C3, D7
PG528	Phytotherapy	2	2	3	A2, A4, A8, A32, B5, C6, D3, D6, D7
AC525	Quality Control	2	2	3	A2, A11, A18, B1, B2, B4, B16, C3, C4, C6, D4, D7
	Elective 2	1	2	2	
MC524	Drug Design	2	2	3	A14, A15, A17, B2, B5, C7, D4, D5, D7
OC314	Production of Raw Materials	2	2	3	A15, B2, B5, C6, D7
BA510	Accounting and Business Administration	1	-	1	A5, A6, A7, D1, D2, D8, D9
RP520	Research project	1	-	1	A5, B15, C14, D2, D4, D5, D9, D10, D11
	Total	13	11	18.5	

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Elective Courses

Course code	Course Title	No. of hours per week			PROGRAM ILO'S COVERED
		Lect.	Pract.	Total	
BC524	Clinical nutrition	2	2	3	A7, B14,C9, D3
PT529	Advanced Pharmacology	2	2	3	A2, A4, A30, B2, C10, C14, D3, D5, D7, D10
POC525	Heterocyclic synthesis of drugs	2	2	3	A15, B2, B5, C6, D7
PG529	Manufacturing and production of crude drugs of natural origin	2	2	3	A12, B2, B5, C6, D6, D7
PC528	Good manufacturing practice (GMP)	2	2	3	A1, A11, A18, B1, B2, B3, B16, C3, D3, D6, D7
MC525	Forensic chemistry	2	2	3	A7, A12, A13, B4, C6

	Total contact hours	PROGRAM ILO'S COVERED
Summer training	300 hr	, A6, A8, A37, A38,A39,A40, B1, B2, B16,C15,C16,C19, D1, D2, D3, D4,D7, D8,D11

Appendix 2

Course reports of 2018/2019