



Bachelor of Pharmacy (Clinical Pharmacy)

Program Report

(2019 – 2020)

Prepared by

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Teaching Institution: Faculty of Pharmacy, Zagazig University, Egypt

Awarding Institution: Zagazig University

Degree Award : Bachelor of Pharmacy (Clinical Pharmacy)

Length and Mode : 5 years, full- time, credit hour system

Program Coordinator: Prof. Amal El-Gendi

A- Basic Information:

1- **Program Title:** Bachelor of Pharmacy (clinical pharmacy)

2- **Program Type:** single, credit hour system

3- **Number of Courses:** 74

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, Anatomy Oncology, Pathology, Cardiology, Pediatrics, chest, dermatology and virology departments (Faculty of Medicine)
- Mathematics department (Faculty of Science)
- English Language department (Faculty of Education)
- Accounting & Administration department (Faculty of Commerce)

5- **Co-coordinators:**

- Prof. Amal El-Gendi “Program coordinator”

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

B- Statistics:

1. No. of students admitting the program (2015 - 2016): 241
2. No. of students admitting the program this year (2019 – 2020): 264
Percentage increase: 27.53% (reflecting good program reputation)
3. No. of students completing the program and as a percentage of those who started:

No. of students admitted to the program (2015 – 2016)	No. of students completed the program (2019-2020)	% of students completed the program within 5 years
241	150	62.2 %

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

Year	Grade				
	Excellent	Very Good	Good	Pass	Fail
Level 1	25	92	79	22	48
	9.39%	34.5 %	29.69 %	8.27%	18.04%

Year	Grade				
	Excellent	Very Good	Good	Pass	Fail
Level 2	17	83	77	21	16
	7.94%	38.78%	35.98%	9.81%	7.47%

Year	Grade				
	Excellent	Very Good	Good	Pass	Fail
Level 3	34	87	53	7	1
	18.68%	47.8%	29.12%	38.46%	0.5%

Year	Grade				
	Excellent	Very Good	Good	Pass	Fail
Level 4	39	87	43	9	3
	21.54%	48.06%	23.75%	4.97%	1.65%

Year	Grade				
	Excellent	Very Good	Good	Pass	Fail
Level 5	45	99	48	20	8
	21.2%	46.69%	22.6%	9.43%	3.77%

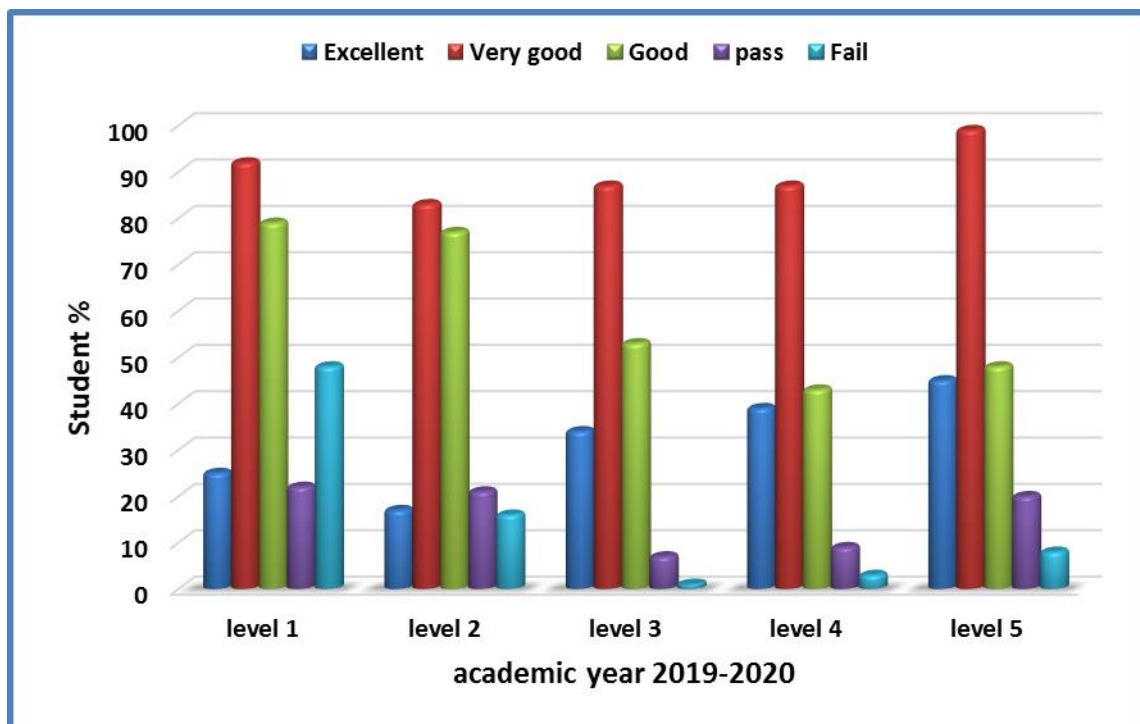
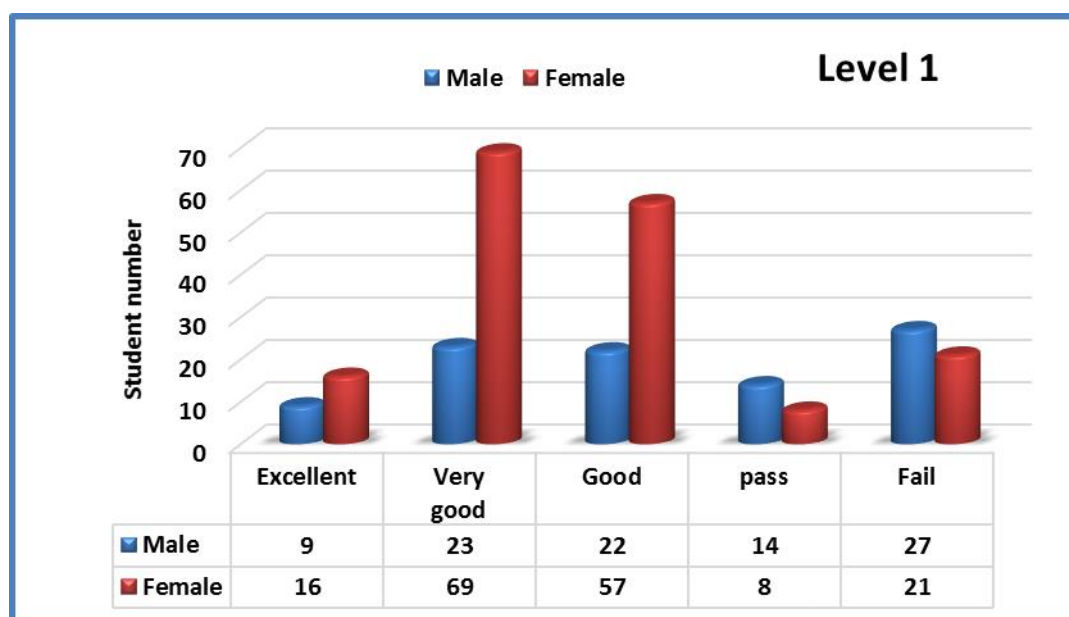
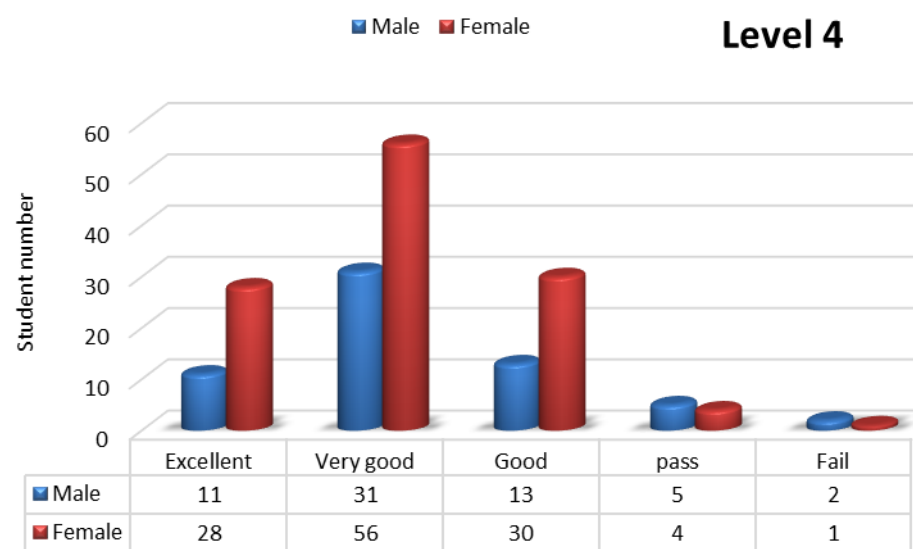
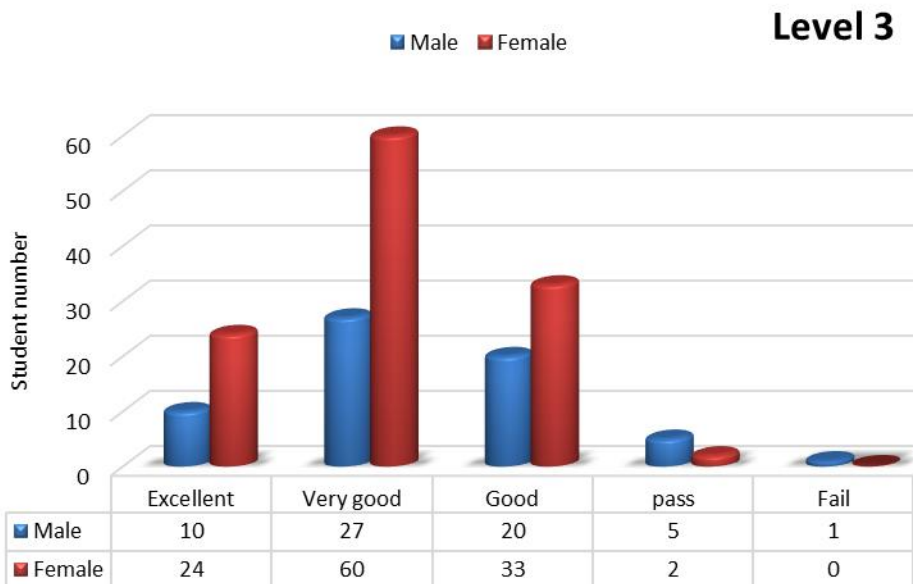
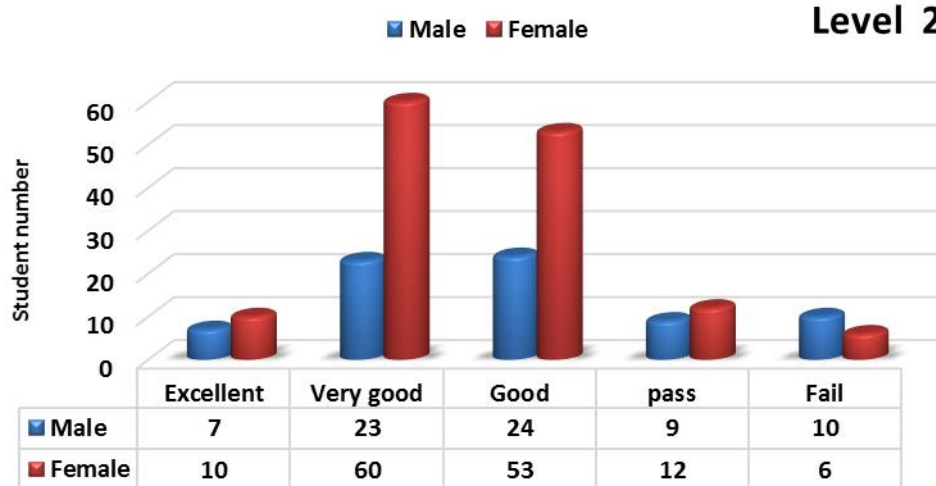


Fig. 1: Follow up of students' progress along the five years of the program.





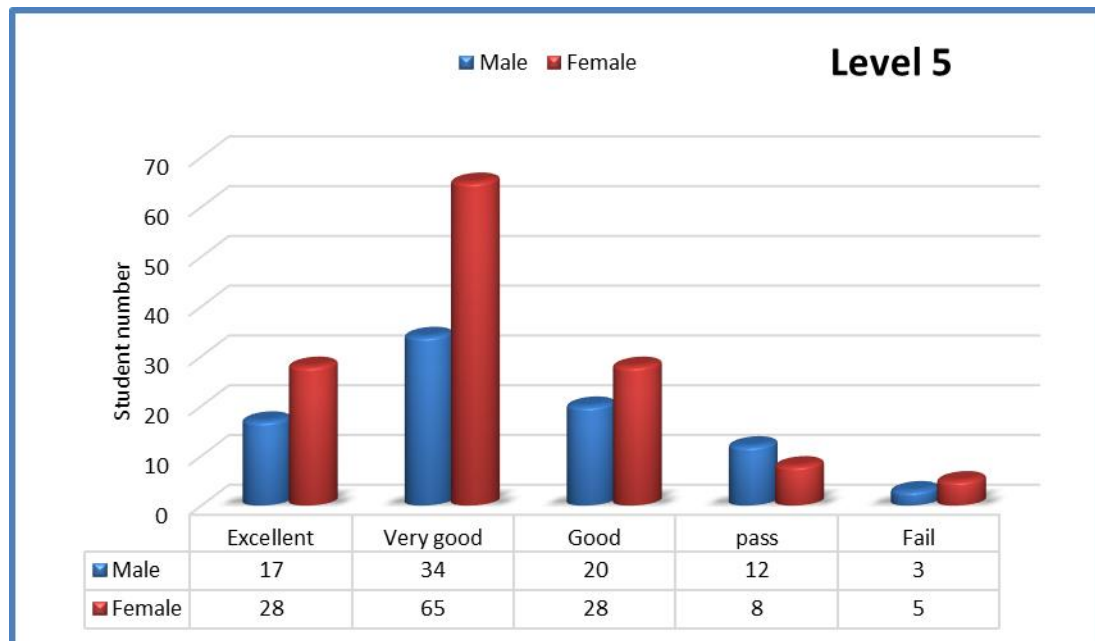


Fig. 1: Follow up of students' progress along the five years of the program.

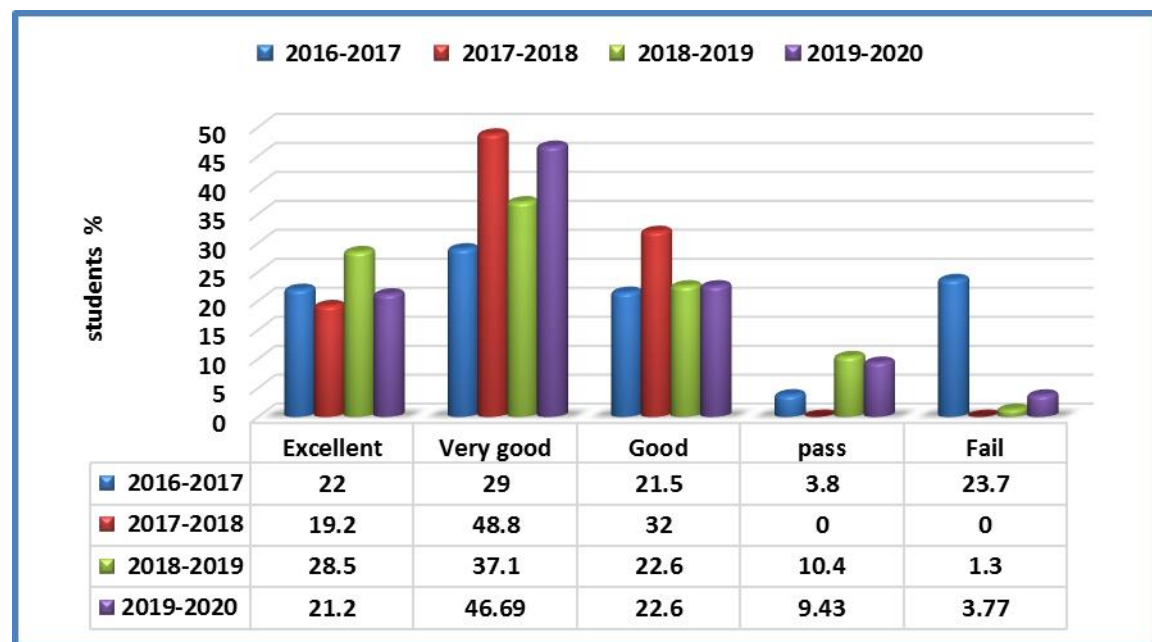


Fig. 2: Grades of 2019-2020 graduates compared with last three years graduates.

C- Professional Information:

Academic Standards:

1. Achievement of Program Intended learning Outcomes.

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

National Academic Reference Standards (NARS, 2009)	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] Illustrate the principles of organic chemistry, analytical chemistry, biophysics, biology, and mathematical sciences.	• Physical and Inorganic Chemistry • Pharmaceutical Organic Chemistry-1 • Biophysics • Cell Biology • Mathematic and Statistics • English Language • Histology • Pharmaceutical Organic Chemistry-2 • Human Rights • Pharmaceutical Analytical chemistry-1 • Pharmaceutical Organic Chemistry-3 • Pharmaceutical Analytical chemistry-2 • Instrumental Analysis • General Microbiology and Immunology
	[A2] State the principles of pharmaceutical sciences including pharmacognosy and pharmaceutical chemistry	• Botany and Medicinal Plants • Mathematic and Statistics • Pharmacognosy-1 • Physical Pharmacy • Pharmacy Orientation • Pharmaceutical Dosage Form-1 • Pharmaceutical Dosage Form-2 • Medicinal chemistry-1 • Biopharmaceutics & pharmacokinetics • Cosmetic • Medicinal chemistry-2 • Controlled drug delivery • Hospital pharmacy • Pharmaceutical microbiology • Public health • Radiopharmaceuticals • Drug marketing • Phytotherapy

	[A3] Explain the principles of medical sciences including: physiology, histology, anatomy, biochemistry, pharmacology, therapeutics, parasitology, pathology medical microbiology, immunology and virology.	• Anatomy • Physiology • Medical terminology • Biochemistry-1 • Parasitology • Biochemistry-2 • Clinical Microbiology • Pathophysiology • Pathology • Clinical Nutrition • Therapeutics-1 • Therapeutics-2 • Pharmacology I • General Microbiology and Immunology
	[A4] Outline the fundamentals of management, financial and human resources, drug promotion, sales and marketing, business administration, accounting, and pharmaco-economic, social, behavioral and environmental sciences as well as pharmacy practice sciences.	• Psychology • Business administration • Pharmacology II • Sociology • Toxicology and forensic chemistry • Drug information
2.2 Physical-chemical properties of various substances used in preparation of medicines including inactive and active ingredients as well as biotechnology and radio- labeled products.	[A5] Describe the physical and chemical properties of active and inactive chemicals (synthetic or natural) and their effect on the design and formulation of pharmaceutical compounds.	• Physical and Inorganic Chemistry • Pharmaceutical Organic Chemistry-3 • Pharmacognosy-2 • Phytochemistry-1 • Pharmaceutical Dosage Form-2

	[A6] Summarize physico-chemical properties of medicines, biological products and radio-pharmaceuticals focusing on thermodynamics, chemical kinetics and assessment of their chemical and physical stabilities.	•Physical and Inorganic Chemistry •Pharmacognosy-2 •Pharmaceutical Dosage Form-2
2.3 Principles of different analytical techniques using GLP guidelines and validation procedures	[A7] List the fundamentals of different analytical techniques and its application in pharmaceutical chemistry, including good laboratory practice (GLP).	• Pharmaceutical Analytical chemistry-1 • Pharmaceutical Analytical chemistry-2 • Instrumental Analysis • Quality control of herbal drugs
2.4 Principles of isolation, synthesis, purification, identification, and standardization methods of pharmaceutical compounds.	[A8] Illustrate the basics of separation, synthesis, purification, identification and standardization methods of different pharmaceutical compounds and biologicals.	• Botany and Medicinal Plants • Pharmacognosy-1 • Pharmaceutical Analytical chemistry-2 • Phytochemistry-1 • Pharmaceutical Dosage Form-1 • Medicinal chemistry-1 • Phytochemistry-2 • Medicinal chemistry-2 • Quality control of herbal drugs
2.5 Principles of drug design, development and synthesis.	[A9] Outline the concepts of pharmaceutical chemistry including structures and reactions of biologically active molecules, and the design of new drugs using computer-aided drug design.	• Pharmaceutical Organic Chemistry-1 • Pharmaceutical Organic Chemistry-2 • Medicinal chemistry-1 • Medicinal chemistry-2

2.6 Properties of different pharmaceutical dosage forms including novel drug delivery systems.	[A10] Describe the characters and the formulation of different dosage forms, including controlled, targeted and advanced drug delivery systems.	• Pharmaceutical Dosage Form-1 • Pharmaceutical Dosage Form-2 • Cosmetic • Radiopharmaceuticals • Controlled drug delivery systems • Summer training
2.7 Principles of various instruments and techniques including sampling, manufacturing, packaging, labeling, storing and distribution processes in pharmaceutical industry.	[A11] Identify good pharmaceutical manufacturing practice (GMP) and quality assurance in different pharmaceutical processes (production, packaging, labeling and distribution)	• Pharmaceutical technology • Instrumental Analysis • Quality control of herbal drugs • Summer training
2.8 Principles of pharmacokinetics and biopharmaceutics with applications in therapeutic drug monitoring, dose modification and bioequivalence studies.	[A12] Explain pharmacokinetics models and pharmacokinetic following different routes of administration, bioavailability and bioequivalence.	• Biopharmaceutics & pharmacokinetics • Clinical pharmacokinetics
2-9 Principles of hospital pharmacy including I.V. admixtures, TPN and drug distribution system	[A13] Outline the principles of hospital pharmacy, including dispensing, hospital formulary, radiopharmaceuticals, total parenteral nutrition, I.V. admixtures, drug monitoring, adverse effects and dose adjustment.	• Therapeutics- 1 • Hospital pharmacy • Clinical pharmacy-1 • Pharmaceutical microbiology • Clinical pharmacy-2 • Community pharmacy practice • Summer training

2.10 Principles of public health issues including sources and control of microbial contamination as well as sanitation, disinfection, sterilization methods and microbiological QC of pharmaceutical products.	[A14] Specify the basics of public health, the art of preventing disease, promoting health, raising public awareness for the safe use and disposal of medicine.	Public health & preventative medicine
	[A15] List the different methods of sterilization, sterility testing and their application in microbiological quality control of pharmaceutical products.	General Microbiology and Immunology
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	[A16] Demonstrate the principles of normal body and abnormal body functions in healthy and diseased states	- Histology - Biochemistry-1 - Biochemistry-2 - Pathophysiology - Pathology - Clinical biochemistry - Clinical Nutrition - Oncology - Gastroenterology - Treatment of dermatological and reproductive diseases - Treatment of pediatrics diseases - Treatment of respiratory system diseases
	[A17] Illustrate genomics and different biochemical pathways regarding their correlation with different diseases.	
	[A18] Describe the structure of the human body and its component organs and cells. Causes, development, and consequences of diseases.	

2.12 Etiology, epidemiology, laboratory diagnosis and clinical features of different diseases and their pharmacotherapeutic approaches.	[A19] List the etiology, epidemiology, treatment and control of microbial and parasitic infection and host immune response to such infections.	• Histology • Parasitology • Clinical Microbiology • Pathophysiology • Pathology • Clinical Nutrition • Clinical Pharmacology • Clinical biochemistry • Oncology • Gastroenterology • Treatment of dermatological and reproductive diseases • Treatment of pediatrics diseases • Treatment of respiratory system diseases
	[A20] Specify laboratory diagnosis of different diseases.	• Biochemistry-1 • Clinical Microbiology • Pathophysiology • Community pharmacy • Pathology • Clinical pharmacy-1 • Clinical biochemistry • Public health • Clinical Pharmacology • Oncology • Clinical pharmacy-2
	[A21] Determine pharmacotherapeutic approaches of different diseases.	• Clinical Microbiology • Pathophysiology • Clinical Pharmacology • Oncology • Therapeutics-1 • Therapeutics-2 • Treatment of respiratory system diseases
2-13 Pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, ADRs and drug interactions.	[A22] Illustrate the mechanisms of drug action, and the therapeutic uses, adverse reactions and contraindications	• Medicinal chemistry-1 • Community • Medicinal chemistry-2 • Drug interaction • Therapeutics-1 • Toxicology and forensic chemistry • Therapeutics-2

2-14 Principles of clinical pharmacology, pharmacovigilance and the rational use of drugs.	[A23] Determine the principles of clinical pharmacology, impact of drug interactions on pharmacotherapy for various diseases, and pharmacovigilance	• Clinical Pharmacology
2-15 Basis of complementary and alternative medicine	[A24] Categorize the herbal preparations and the nutritional supplements with emphasis on disease prevention and health promotion	• Phytochemistry-1 • Quality control of herbal drugs • Pharmaceutical biotechnology • Pharmacology I • Pharmacology II • Quality control and drug analysis • Clinical Nutrition
2-16 Toxic profile of drugs and other xenobiotics including sources, identification, symptoms, management control and first aid measures	[A25] Identify the teratogenicity, toxicity and poisoning of common drugs, chemicals, radioactive materials, natural toxins, including: sources, identification, handling, symptoms, management and treatment.	• Pharmaceutical biotechnology • Toxicology and forensic chemistry
	[A26] Outline the fundamentals of first aid, including basic life support, shock, medical emergency, rescue and transportation.	• First aid

2-17 Methods of biostatistical analysis and pharmaceutical calculations	[A27] Demonstrate the basic understanding of pharmaceutical calculations, biostatistical analysis and biological standardization	• Biopharmaceutics & pharmacokinetics • Pharmaceutical biotechnology • Public health • Pharmacology II • Quality control and drug analysis
2-18 Principles of management including financial and human resources.	[A28] Mention the principles of management, capital requirement, financial and human resources, purchasing and financing new pharmacy.	• Business administration • Summer training
2-19 Principles of drug promotion, sales and marketing, business administration, accounting and pharmacoeconomics.	[A29] Describe drug marketing, advertising, interpersonal communication, business promotions, business administration, accounting and pharmacoeconomics	• Business administration • Drug information • Drug marketing
2-20 Principles of proper documentation and drug filing systems.	[A30] Define the concepts and the principles of clinical pharmacy practice, including maintenance of patient profiles, proper documentation and drug filing	• Summer training • Hospital pharmacy
2-21 Regulatory affairs, pharmacy laws and ethics of health care and pharmacy profession	[A31] State the laws that govern and affect pharmacy practice, ethical principles and moral rules of pharmacy profession	• Human Rights • Pharmacy Legislation • Quality control and drug analysis • Summer training

3-1 Use the proper pharmaceutical and medical terms and abbreviations and symbols in pharmacy practice.	[B1] Use effectively the medical and pharmaceutical terminologies, medical abbreviations, idioms, suffixes and prefixes.	• Biophysics • Cell Biology • English Language • Histology • Physiology • General Microbiology and Immunology • Clinical Microbiology • Pathophysiology • Community • Public health • Radiopharmaceuticals • Pharmacology II • Gastroenterology • Treatment of dermatological and reproductive diseases • Summer training
3-2 Handle and dispose chemicals and pharmaceutical preparations safely	[B2] Handle and dispose chemical and pharmaceutical materials safely with application of good laboratory practice (GLP) principles	• Physical and Inorganic Chemistry • Pharmacognosy-1 • Pharmaceutical Analytical chemistry-1 • Pharmaceutical Organic Chemistry-3 • Pharmaceutical Analytical chemistry-2 • Pharmacognosy-2 • Biochemistry-1 • Phytochemistry-1 • Instrumental Analysis • General Microbiology and Immunology • Medicinal chemistry-1 • Phytochemistry-2 • Medicinal chemistry-2 • Clinical pharmacy-1 • Hospital pharmacy • Pharmaceutical biotechnology • Pharmaceutical microbiology • Radiopharmaceuticals • Phytotherapy • Quality control and drug analysis • Toxicology and forensic chemistry • Summer training

3-3 Compound, dispense, label, store and distribute medicines effectively and safely	[B3] Use the chemical and the pharmaceutical materials properly either in drug manufacture, formulation, design, labeling, storing and distribution of medicinal agents with application of good manufacturing practice (GMP) principles.	• Pharmaceutical Organic Chemistry-3 • Pharmaceutical Dosage Form-2 • Pharmaceutical technology • Hospital pharmacy
3-4 Extract, isolate, synthesize, purify, identify, and/or standardize active substances from different origins.	[B4] Assess herbal drugs for the determination of drug adulteration, controlling the quality of produced medicinal agents, and discovering new drug entities.	• Botany and Plant Taxonomy • Pharmacognosy-1 • Pharmacognosy-2 • Quality control of herbal drug
	[B5] Apply different methods of analysis of raw materials, inorganic substances and medicinal.	• Physical and Inorganic Chemistry • Pharmaceutical Analytical chemistry-1 • Pharmaceutical Analytical chemistry-2 • Instrumental Analysis • Quality control of herbal drugs
	[B6] Demonstrate skills in detect, isolation, purification, and prediction of the method of synthesis of any chemical entity belonging to certain drug class	• Pharmaceutical Organic Chemistry-1 • Pharmaceutical Organic Chemistry-2 • Biochemistry-1 • Phytochemistry-1 • Phytochemistry-2

3-5 Select medicines based on understanding of etiology and pathophysiology of diseases	[B7] Select medicine in accordance with understanding of disease etiology and pathophysiology.	• General Microbiology and Immunology • Pathophysiology • Public health • Pharmacology II • Clinical Nutrition • Clinical Pharmacology • Oncology • Therapeutics-1 • Therapeutics-2 • Treatment of cardiovascular diseases • Treatment of pediatrics diseases • Treatment of respiratory system diseases • Summer training
	[B8] Evaluate therapeutic plans based on patient's progress and laboratory results.	• General Microbiology and Immunology • Pathophysiology • Public health • Pharmacology II • Clinical Nutrition • Clinical Pharmacology • Oncology • Therapeutics-1 • Therapeutics-2 • Treatment of cardiovascular diseases • Treatment of pediatrics diseases • Treatment of respiratory system diseases • Summer training
	[B9] Select appropriate nutritional approaches for the management of different medical conditions.	• General Microbiology and Immunology • Pathophysiology • Public health • Pharmacology II • Clinical Nutrition • Clinical Pharmacology • Oncology • Therapeutics-1 • Therapeutics-2 • Treatment of cardiovascular diseases • Treatment of pediatrics diseases • Treatment of respiratory system diseases • Summer training
3-6 Monitor and control microbial growth and carry out laboratory tests for identification of infectious and non-infectious diseases.	[B10] Handle biological specimens safely.	• Biochemistry-1 • Parasitology • Biochemistry-2 • Pathology • Clinical Nutrition • Oncology • Gastroenterology • Treatment of pediatrics diseases • Treatment of respiratory system diseases • Clinical pharmacy-2 • Summer training

	[B11] Perform appropriate laboratory tests to diagnose infectious and non-infectious diseases.	• Biochemistry-1 • Parasitology • Biochemistry-2 • Pathology • Clinical Nutrition • Oncology • Gastroenterology • Treatment of pediatrics diseases • Treatment of respiratory system diseases • Clinical pharmacy-2 • Summer training
3-7 Assess toxicity profiles of different xenobiotics and detect poisons in biological specimens	[B12] Assess toxicity profiles of different xenobiotics.	• Pharmaceutical biotechnology • Pharmacology II • Toxicology and forensic chemistry
	[B13] Detect poisons in biological specimens.	• Pharmaceutical biotechnology • Pharmacology II • Toxicology and forensic chemistry
3-8 Apply techniques used in operating pharmaceutical equipment and instruments	[B14] Apply standard instrumentation techniques and laboratory procedures in quality control of pharmaceuticals.	• Physical Pharmacy • Pharmaceutical technology • Summer training
3-9 Maintain public awareness on rational use of drugs and social health hazards of drug abuse and misuse.	[B15] Educate health care professionals and patients regarding rational use of drugs and social health hazards of drug abuse and misuse.	• Clinical Microbiology • Pharmacology I • Quality control and drug analysis • Clinical pharmacy-2 • Clinical Pharmacology • Treatment of respiratory system diseases • Summer training

3-10 Advise patients and other health care professionals about safe and proper use of medicines	[B16] counsel health care professionals and patients for the safe and effective use of medicine and possible drug-drug/drug-food interactions.	• Clinical Microbiology • Community • Pharmacology I • Clinical Nutrition • Gastroenterology • Treatment of cardiovascular diseases • Treatment of pediatrics diseases • Treatment of respiratory system diseases
3-11 Conduct research studies and analyze the results	[B17] Construct research studies with good analysis and interpretation of the results.	• Histology • Phytochemistry-1 • Medicinal chemistry-1 • Pathophysiology • Phytochemistry-2 • Medicinal chemistry-2 • Pharmaceutical microbiology • Phytotherapy • Clinical pharmacokinetics • Therapeutics-1 • Toxicology and forensic chemistry • Therapeutics-2 • Treatment of dermatological and reproductive diseases • Treatment of respiratory system diseases
3-12 Employ proper documentation and drug filing systems	[B18] Prepare proper drug reports and documentation.	• Clinical pharmacy-2 • Hospital pharmacy • Summer training
Extra NARS	[B15] Handle experimental animals in laboratory settings for the purpose of using such skills in drug research and/or approval.	• Pharmacology I • Pharmacology II

	[B16] Perform different analytical tests for blood and body fluids to determine the functional state of different body organs	• Clinical biochemistry • Dermatological and reproductive diseases
4-1 Apply pharmaceutical knowledge in the formulation of safe and effective medicines as well as in dealing with new drug delivery systems.	[C1] Apply knowledge of pharmaceutical sciences in the formulation of safe and effective medicines as well as new drug delivery systems.	• Pharmaceutical Dosage Form-1 • Pharmacy Legislation • Clinical Microbiology • Pharmaceutical Dosage Form-2 • Clinical pharmacy-1 • Hospital pharmacy • Cosmetic • Community pharmacy • Drug marketing • Clinical Nutrition • Treatment of pediatrics diseases • Summer training
4-2 Comprehend and apply GLP, GPMP, GSP and GCP guidelines in pharmacy practice	[C2] Comprehend and apply good laboratory practice (GLP), good storage practice (GSP) and good clinical practice (GCP) guidelines in pharmacy practice.	• Botany and Medicinal Plants • Pharmacognosy-1 • Clinical Microbiology • Quality control of herbal drugs • Clinical biochemistry • Clinical pharmacy 2 • Summer training
4-3 Apply qualitative and quantitative analytical and biological methods for QC and assay of raw materials as well as pharmaceutical preparations	[C3] Design qualitative and quantitative analytical and biological methods for QC and assay of raw materials as well as pharmaceutical preparations.	• Physical and Inorganic Chemistry • Pharmaceutical Analytical chemistry-1 • Pharmaceutical Analytical chemistry-2 • Pharmacognosy-2 • Biochemistry-1 • Phytochemistry-1 • Instrumental Analysis • Biochemistry-2 • Medicinal chemistry-1 • Phytochemistry-2 • Medicinal chemistry-2 • Pharmaceutical technology • Quality control of herbal drugs • Pharmaceutical biotechnology • Clinical biochemistry • Clinical Pharmacology

4-4 Recognize and control possible physical and/or chemical incompatibilities that may occur during drug dispensing	[C4] Solve problems concerning incompatibilities during drug dispensing	• Pharmaceutical Dosage Form-1 • Community pharmacy • Controlled drug delivery • Hospital pharmacy • Clinical pharmacy 2 • Clinical Pharmacology
4-5 Select the appropriate methods of isolation, synthesis, purification, identification, and standardization of active substances from different origins.	[C5] Develop the proper analytical procedures for the standardization of any chemical entity.	• Instrumental Analysis • Quality control of herbal drugs
	[C6] Select the appropriate methods of isolation, synthesis, purification, identification, and standardization of active substances from different origins.	• Pharmaceutical Organic Chemistry-1 • Botany and Medicinal Plants • Pharmaceutical Organic Chemistry-2 • Pharmacognosy-1 • Physical Pharmacy • Pharmaceutical Analytical chemistry-1 • Pharmaceutical Organic Chemistry-3 • Biochemistry-1 • Phytochemistry-1 • Phytochemistry-2
4-6 Apply the principles of bio-informatics and computer-aided tools in drug design	[C7] Apply the principles of bio-informatics and computer-aided tools in drug design.	• Medicinal chemistry 1 • Medicinal chemistry 2

4-7 Apply various principles to determine the characteristics of biopharmaceutical products	[C8] Summarize different genetic molecular techniques to produce and improve biopharmaceutical products from living organisms.	• Pharmaceutical microbiology • Phytotherapy
4-8 Select and assess appropriate methods of infection control to prevent infections and promote public health.	[C9] Select the most appropriate method for infection control.	• Parasitology • Clinical Microbiology • Summer training
	[C10] Employ the knowledge concerning different microbial and parasitic diseases for promotion of community health.	
4-9 Utilize the pharmacological basis of therapeutics in the proper selection and use of drugs in various disease conditions.	[C11] Integrate and link the knowledge of physiology, pharmacology, and toxicology in the proper selection and use of drug in various disease conditions.	• Biophysics • Pathophysiology • Drug interaction • Pharmacology II • Clinical Nutrition • Clinical Pharmacology • Therapeutics-1 • Therapeutics-2 • Summer training
4-10 Calculate and adjust dosage and dose regimen of medications	[C12] Calculate dosage and dose regimen of medications based on patient condition.	• Biopharmaceutics & pharmacokinetics • Community pharmacy practice • Pharmaceutical dosage forms 1 • Pharmaceutical dosage forms 2 • Summer training

4-11 Assess drug interactions, ADRs and pharmacovigilance.	[C13] Justify the knowledge of pharmacology and toxicology in the assessment of drug-drug, drug-food, drug-smoking and drug- environment interaction, and in the proper selection and use of drug in various disease conditions.	• Drug interaction • Clinical Pharmacology • Therapeutics-1 • Toxicology and forensic chemistry • Therapeutics-2 • Summer training
4-12 Apply the principles of pharmacoeconomics in promoting cost/effective pharmacotherapy	[C14] Use principles of pharmacoeconomics and marketing information for promoting cost/effective pharmacotherapy.	• Business administration • Pharmaceutical analysis and Quality control • Drug information • Summer training
4-13 Analyze and interpret experimental results as well as published literature	[C15] Analyze and interpret experimental results and information from published literature.	• Anatomy • Biochemistry-1 • Phytochemistry-1 • General Microbiology and Immunology • Biochemistry-2 • Clinical Microbiology • Pathology • Clinical biochemistry • Clinical pharmacy 2 • Clinical Pharmacology • Oncology • Gastroenterology • Treatment of cardiovascular diseases • Dermatological and reproductive diseases • Treatment of respiratory system diseases • Summer training

4-14 Analyze and evaluate evidence-based information needed in pharmacy practice.	[C16] Apply evidence-based guidelines and professional principles in pharmacy practice with other healthcare professionals.	• Cell Biology • Histology • Biochemistry-1 • General Microbiology and Immunology • Pathophysiology • Pathology • First aids • Pharmaceutical biotechnology • Public health • Clinical biochemistry • Clinical pharmacy 2 • Pharmacology II • Phytotherapy • Oncology • Clinical pharmacokinetics • Toxicology and forensic chemistry • Gastroenterology • Treatment of cardiovascular diseases • Dermatological and reproductive diseases • Treatment of pediatrics diseases • Treatment of respiratory system diseases • Summer training
5-1 Communicate clearly by verbal and written means	[D1] Interact effectively with patients, the public and health care professionals, either by writing or orally.	• English Language • Phytochemistry-1 • Instrumental Analysis • General Microbiology and Immunology • Clinical Microbiology • Pathophysiology • Community • Pathology • Pharmaceutical biotechnology • Public health • Clinical biochemistry • Clinical pharmacy 2 • Pharmacology II • Clinical Nutrition • Clinical Pharmacology • Sociology • Therapeutics-1 • Drug information • Therapeutics-2 • Treatment of cardiovascular diseases • Treatment of pediatrics diseases • Treatment of respiratory system diseases • Summer training

5-2 Retrieve and evaluate information from different sources to improve professional competencies	[D2] Retrieve information from a variety of sources.	• Mathematic and Statistics • Biochemistry-1 • General Microbiology and Immunology • Clinical Microbiology • Pathophysiology • Pathology • Quality control of herbal drugs • Trauma & first aids • Clinical biochemistry • Toxicology and forensic chemistry • Dermatological and reproductive diseases • Treatment of respiratory system diseases • Summer training
	[D3] Evaluate the information obtained from different sources.	• Mathematic and Statistics • Biochemistry-1 • General Microbiology and Immunology • Clinical Microbiology • Pathophysiology • Pathology • Quality control of herbal drugs • Trauma & first aids • Clinical biochemistry • Toxicology and forensic chemistry • Dermatological and reproductive diseases • Treatment of respiratory system diseases • Summer training

5-3 Work effectively in a team	[D4] Implement tasks as a member of a team.	• Physical and Inorganic Chemistry • Botany and Medicinal Plants • Pharmacognosy-1 • Pharmaceutical Analytical chemistry-1 • Pharmaceutical Organic Chemistry-3 • Pharmaceutical Analytical chemistry-2 • Pharmacognosy-2 • Physiology • Medical terminology • Psychology • Biochemistry-1 • Phytochemistry-1 • General Microbiology and Immunology • Parasitology • Biochemistry-2 • Clinical Microbiology • Pharmaceutical Dosage Form-2 • Pathophysiology • Phytochemistry-2 • Quality control of herbal drugs • Pharmaceutical biotechnology • Clinical biochemistry • Clinical Nutrition • Clinical Pharmacology • Oncology • Sociology • Toxicology and forensic chemistry • Gastroenterology • Treatment of pediatrics diseases • Treatment of respiratory system diseases • Summer training
5-4 Use numeracy, calculation and statistical methods as well as information technology tools	[D5] Apply statistical analysis with good interpretation of the results.	• Biopharmaceutics & pharmacokinetics • Hospital pharmacy • Mathematics • Radiopharmaceuticals • Drug marketing • Summer training

	[D6] Demonstrate good information technology skills.	- Physical Pharmacy - Pharmacognosy-2 - Biochemistry-1 - Clinical Pharmacology - Toxicology and forensic chemistry
5-5 Practice independent learning needed for continuous professional development	[D7] Develop self learning skills for continuous professional development.	- Physical and Inorganic Chemistry - Pathophysiology - Clinical pharmacy 2 - Cosmetic - Pharmacology II - Clinical Nutrition - Clinical Pharmacology - Oncology - Gastroenterology - Treatment of pediatrics diseases - Treatment of respiratory system diseases - Summer training
5-6 Adopt ethical, legal and safety guidelines	[D8] Adopt ethical, legal and safety guidelines	- Pharmaceutical Analytical chemistry-1 - Instrumental Analysis - General Microbiology and Immunology - Clinical Microbiology - Clinical pharmacy-1 - Sociology - Treatment of respiratory system diseases - Summer training
5-7 Develop financial, sales and market management skills	[D9] Develop management skills including financial sales and marketing.	- Drug marketing - Business administration - Summer training
5-8 Demonstrate creativity and time management abilities	[D10] Manage time as evidenced by the ability to plan and implement efficient mode of working.	- Physical and Inorganic Chemistry - Pharmaceutical Organic Chemistry-1 - Botany and Medicinal Plants - Pharmaceutical Organic Chemistry-2 - Pharmacognosy-1 - Pharmaceutical Analytical chemistry-1 - Pharmaceutical Analytical chemistry-2 - Pharmacognosy-2 - Physiology - Biochemistry-1 - Instrumental Analysis - Summer training

5-9 Implement writing and presentation skills	[D11] Present various information and arguments clearly and correctly either by writing or orally.	• Botany and Medicinal Plants • Cell Biology • Histology • Pharmacognosy-1 • Anatomy • Physiology • Biochemistry-1 • Phytochemistry-1 • Instrumental Analysis • General Microbiology and Immunology • Biochemistry-2 • Clinical Microbiology • Medicinal chemistry-1 • Pathophysiology • Phytochemistry-2 • Medicinal chemistry-2 • Pathology • Trauma & first aids • Clinical biochemistry • Clinical Nutrition • Clinical Pharmacology • Oncology • Therapeutics-1 • Toxicology and forensic chemistry • Drug information • Gastroenterology • Therapeutics-2 • Treatment of pediatrics diseases • Treatment of respiratory system diseases • Summer training
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5-10 Demonstrate critical thinking, problem-solving and decision-making abilities	[D12] Develop critical thinking, problem solving and decision making skills.	• Pharmaceutical Organic Chemistry-1 • Biophysics • Cell Biology • Histology • Pharmaceutical Organic Chemistry-2 • Pharmaceutical Organic Chemistry-3 • Physiology • Biochemistry-1 • Phytochemistry-1 • Parasitology • Pharmaceutical Dosage Form-1 • Pharmacy Legislation • Pharmaceutical Dosage Form-2 • Pathophysiology • Business administration • Phytochemistry-2 • Biopharmaceutics & pharmacokinetics • Community • Pathology • Pharmaceutical technology • Quality control of herbal drugs • Hospital pharmacy • Pharmaceutical biotechnology • Clinical biochemistry • Clinical pharmacy 2 • Drug interaction • Drug marketing • Pharmacology II • Clinical Nutrition • Oncology • Clinical pharmacokinetics • Sociology • Toxicology and forensic chemistry • Gastroenterology • Treatment of cardiovascular diseases • Dermatological and reproductive diseases • Treatment of pediatrics diseases • Treatment of respiratory system diseases • Summer training
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- 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. Different teaching methods are used e.g. lectures, demonstration within labs, practical experiments and case studies
6. Some skills are developed through the courses activities such as problem-solving, presentation skills, time management, team work and others
7. Presence of 300 hours dedicated for summer training which is divided into two phases, phase 1 (200 contact hours in any pharmacy setting) and phase 2 (100 contact hours of 8 clinical rotations in University Hospital)
8. **During Covid-19 pandemic since 15 March and sustainment of physical teaching: Application of e-learning through telegram channels**

https://t.me/joinchat/AAAAAEy8x_KKp5WKJ0IVvAالمستوي الاول الاكلينيكي

<https://t.me/joinchat/AAAAAFJMLYnOXsOR33DT4A>المستوي الثاني الاكلينيكي

<https://t.me/joinchat/AAAAAEtSJNKNzycUw5XqW>المستوي الثالث الاكلينيكي

<https://t.me/joinchat/AAAAAEzhtY2UA3IBOBAICA>المستوي الرابع الاكلينيكي

<https://t.me/joinchat/AAAAAFBaAbZ5-VSVO583-g>المستوي الخامس الاكلينيكي

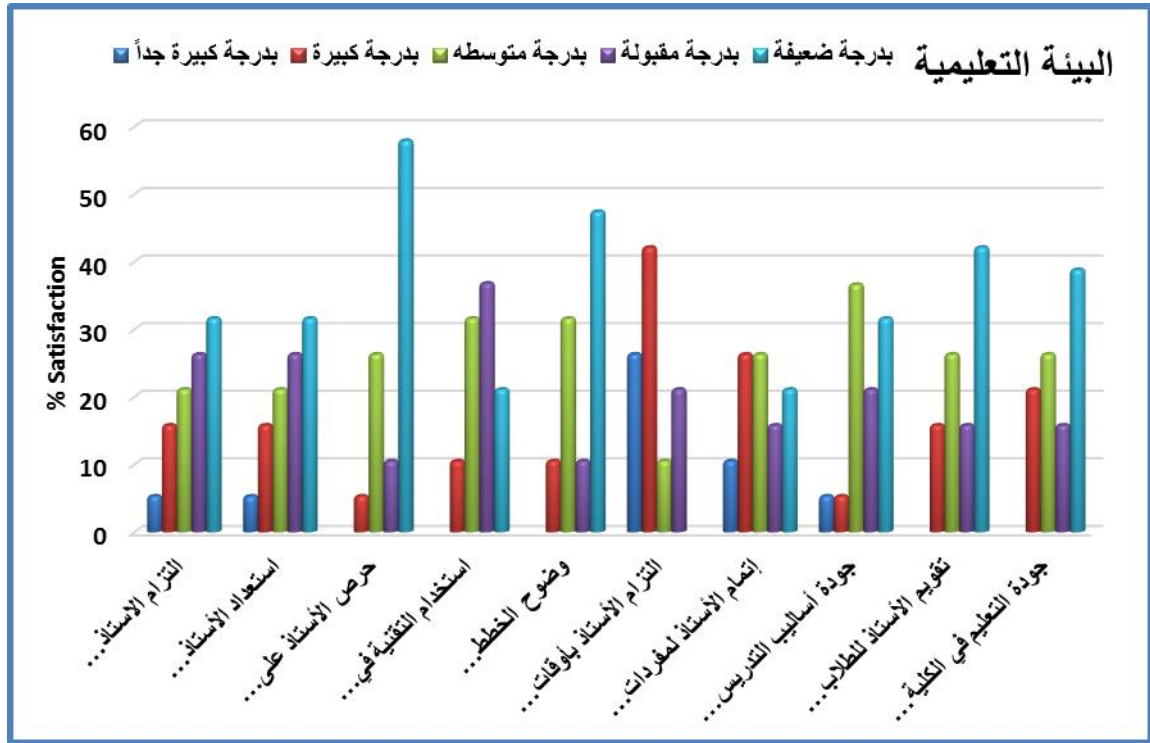
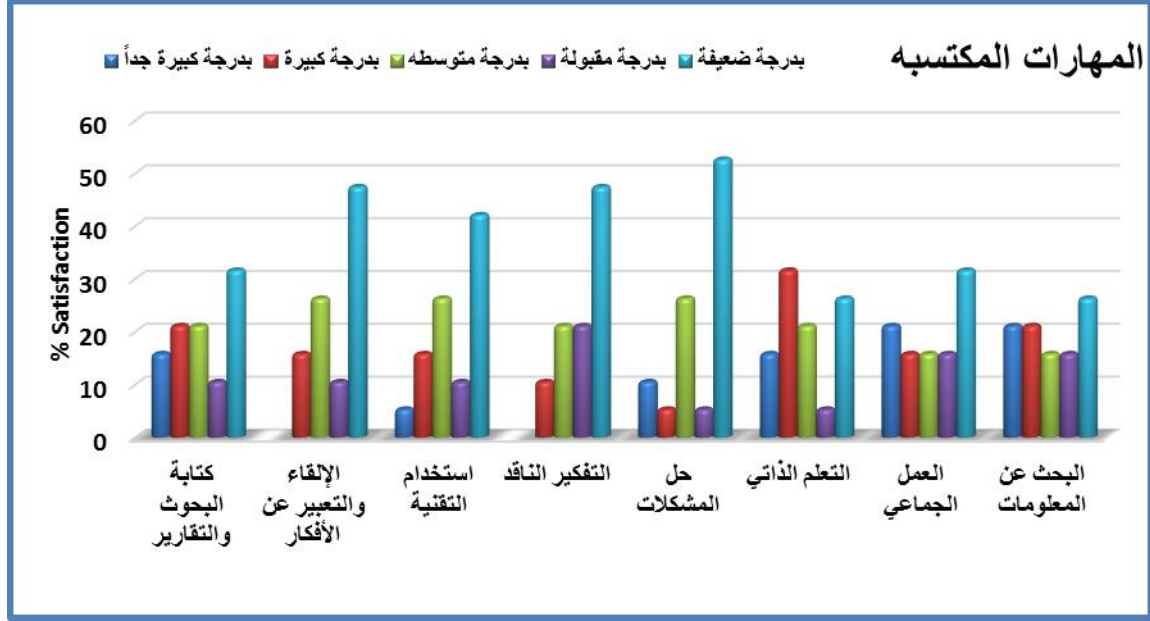
Measures done to ensure achievement of program aims:

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 high program completion rate (> 70%) and pass rates ($\geq 80\%$).

Academic year	pass No	Fail No	Pass rates
2019-2020	212	8	96.36
2018-2019	185	3	99%
2017 - 2018	125	0	100 %
2016 - 2017	146	39	79 %

- Graduates Satisfaction about the program
- % of graduates employment (under processing)
- Employer satisfaction about the quality of graduates



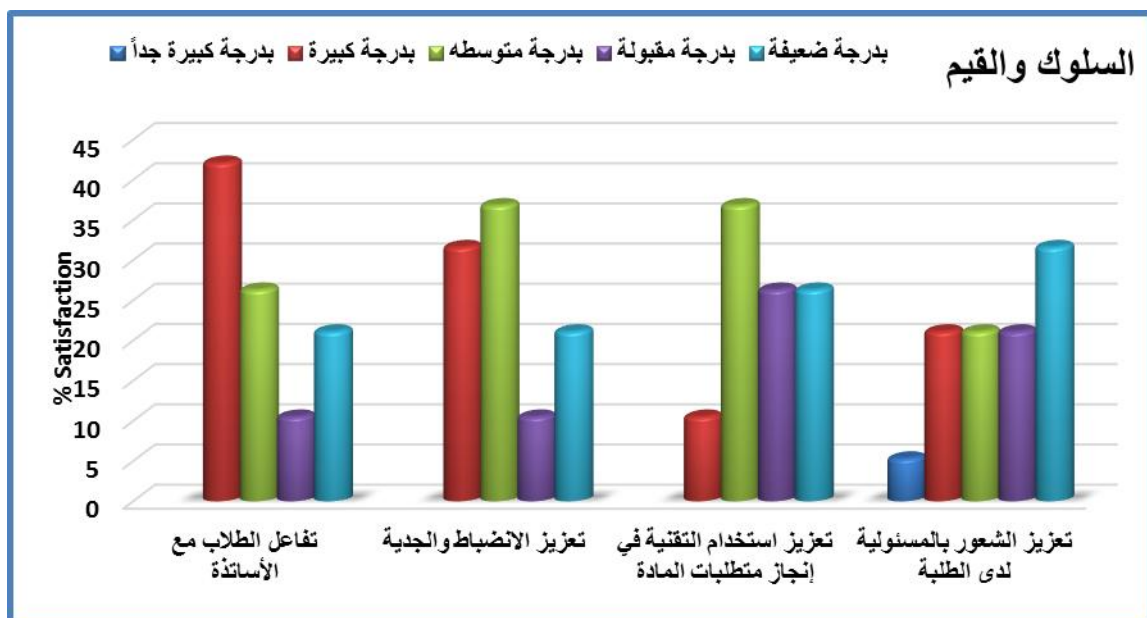
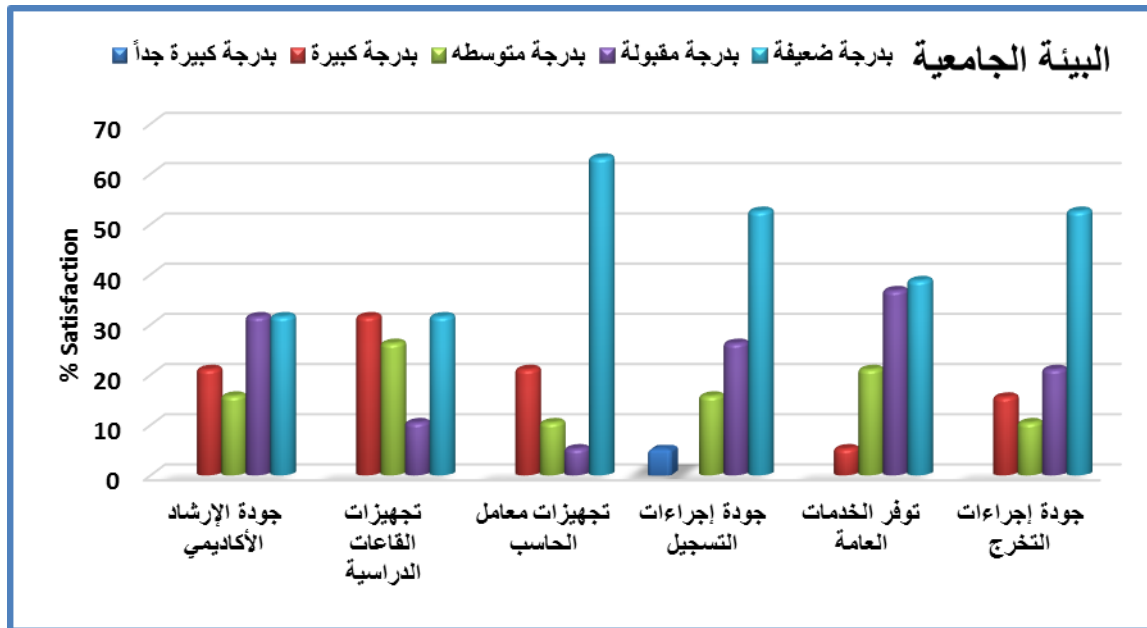


Fig. 4 : Graduate satisfaction about the quality of clinical pharmacy program

Students were unsatisfied about the learning environment, clinical administrative officers, courses registration, computer facilities and skills acquired through the program such as: problem solving, analytical thinking and communication

Stakeholders were surveyed about the quality of the graduates, generally they were satisfied about the different items of the survey except the ability of the graduates to participate in designing patient specific therapeutic plans

(poor satisfaction = 78%) and 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

During Covid-19 pandemic since 15 March and sustainment of physical teaching: Application of new assessment methods such as learning projects and electronic practical exams was implemented.

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 classrooms 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. The students are divided into small groups (60 students/ group) to facilitate active & interactive learning
3. 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.

4. Flexibility of the lecture and exams schedules which are based on students' opinion
5. Availability of the staff members through office hours which are known to the students.
6. Development of staff members' skills regarding teaching and assessment through arranging different training programs
7. Continuous updating and reviewing courses within the different departments.
8. Development of different skills necessary for the future career such as problem solving, presentation, team work and time management through different course activities.
9. Encouraging outstanding students: Faculty offers free or discount from tuition fees for the highest cGPA students (the first three students). The highest score graduate is employed as a demonstrator in the faculty. In addition, the Ministry of High Education offers students with excellent and very good grades a special monthly grant. In addition, the faculty arranges a ceremony to appreciate the outstanding students in different levels of the program.
10. Field training: There is an agreement with Zagazig university hospital for student training (100 hours divided into different eight clinical rotations) after Level 4. In addition to, 200 hours in any pharmacy setting after 3rd Level.

11. On the mid of March 2020, the study was suspended because of Covid-19 pandemic, accordingly the active teaching was replaced by the Online lectures which were also evaluated by the students in the second term.

Fifth year:

Respiratory System diseases course had the lowest satisfaction level, while Therapeutics- 1 had the highest level of satisfaction

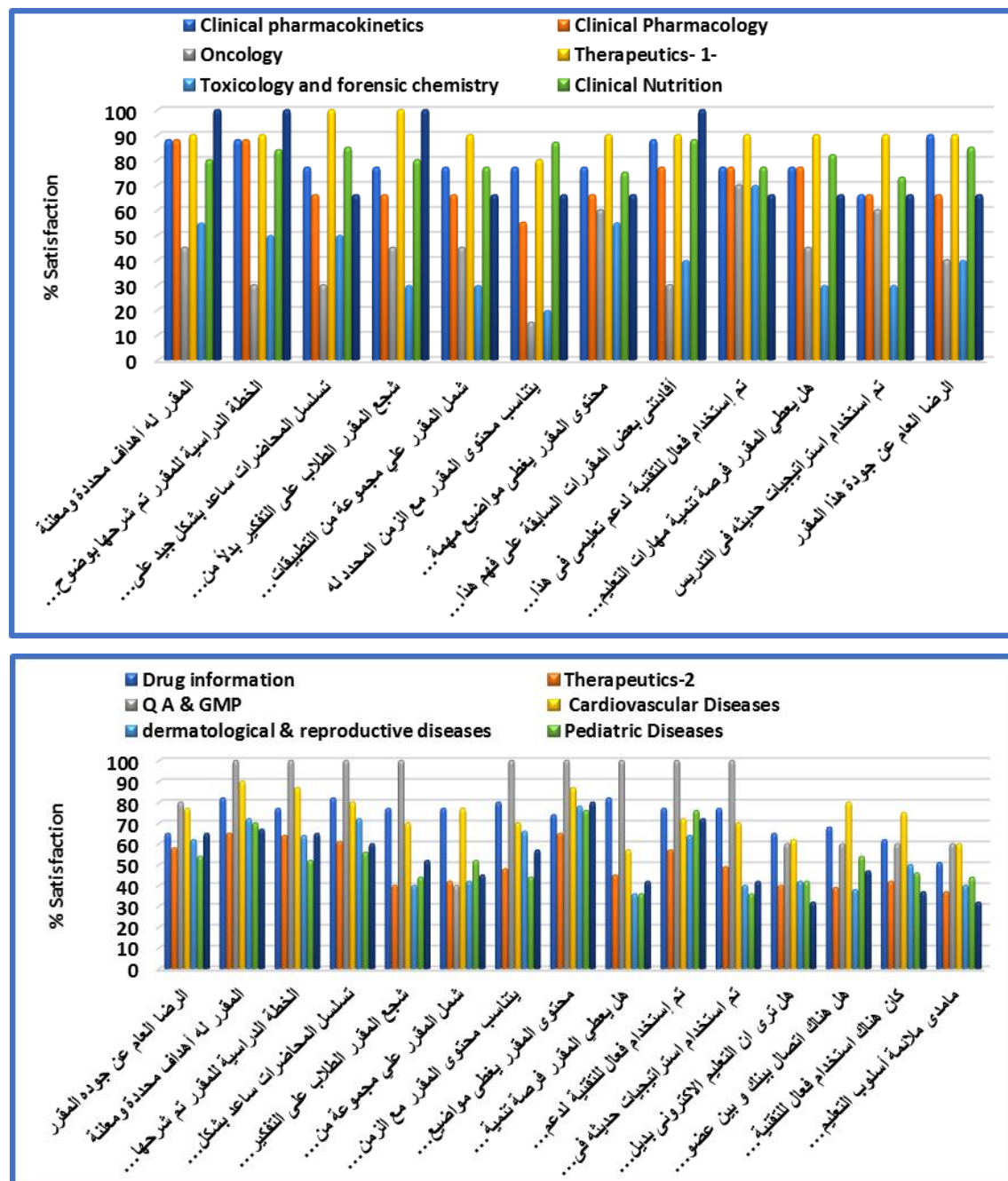


Fig. 5: Fifth year students' satisfaction about 1st term courses (up figure) and 2nd term courses and the online learning (down figure).

B- Effectiveness of Student Support Systems:

- The faculty implements the academic mentoring system. In which students are divided into groups (25 – 30 students) guided by one teaching staff who advises the students about the selection of courses during the registration , guarantee effective communication, identify student weakness points and help them to overcome obstacles they face during their learning journey. In addition they encourage distinguished students to maintain superiority.
- Each staff member has assigned 4 office hours/ week for effective communication with the students. Office hours are announced at the beginning of each semester to the students.
- Arrangement of an orientation day for the newly admitted students in addition to availability of the student handbook.
- The main student support is offered by the Youth Welfare Office, in collaboration with the Vice-Dean of Educational and Students' Affairs. Several social, sports, scientific, artistic & cultural activities are conducted every year.
- Students' Union is selected by elections/nominations program. Its activity is mainly social, cultural, scientific, sports and recreational. They act as a strong link between students and faculty administration. This union also works to defend students' rights and find solutions for student problems.
- All students are covered by health insurance in the different university hospitals with unlimited coverage
- Students relocation from and to the faculty depends on the geographical distribution and the student level. Students relocation is forbidden if the student had finished studying more than 50% of the program credit hours.

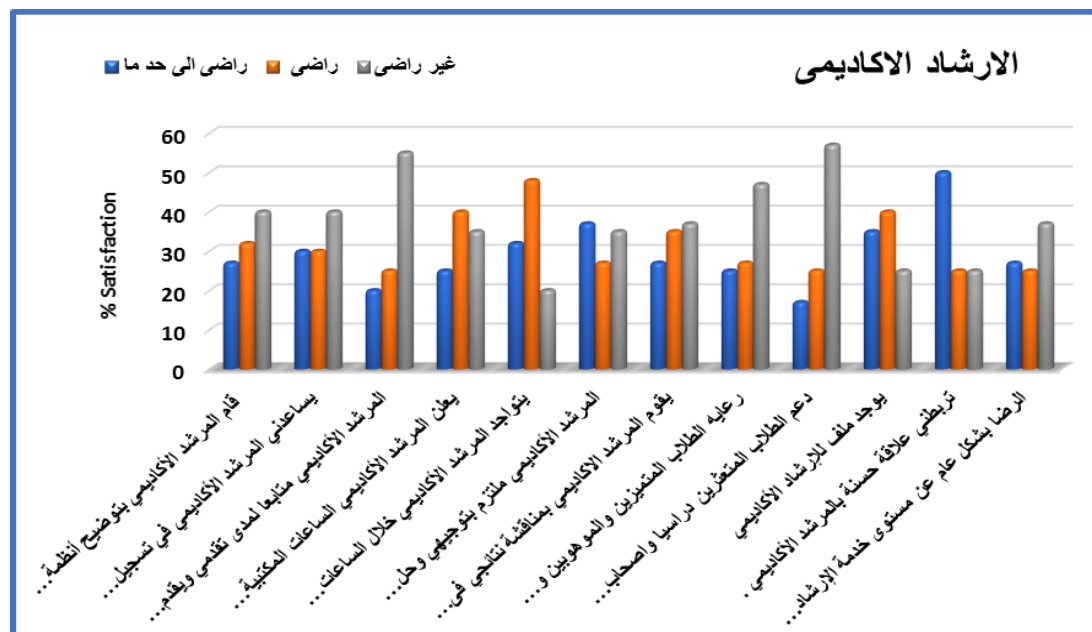
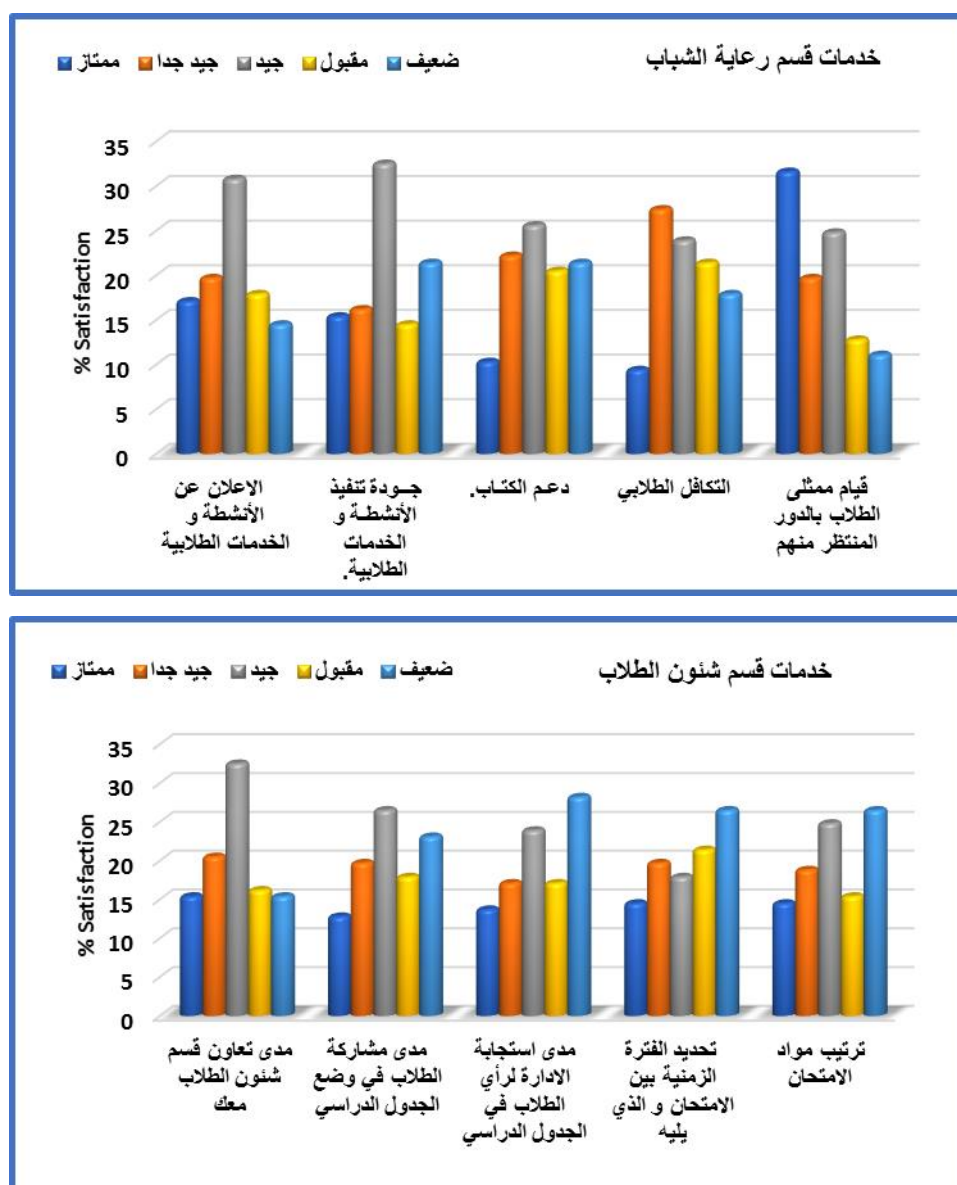


Fig. 6: Students satisfaction about the academic mentoring system.



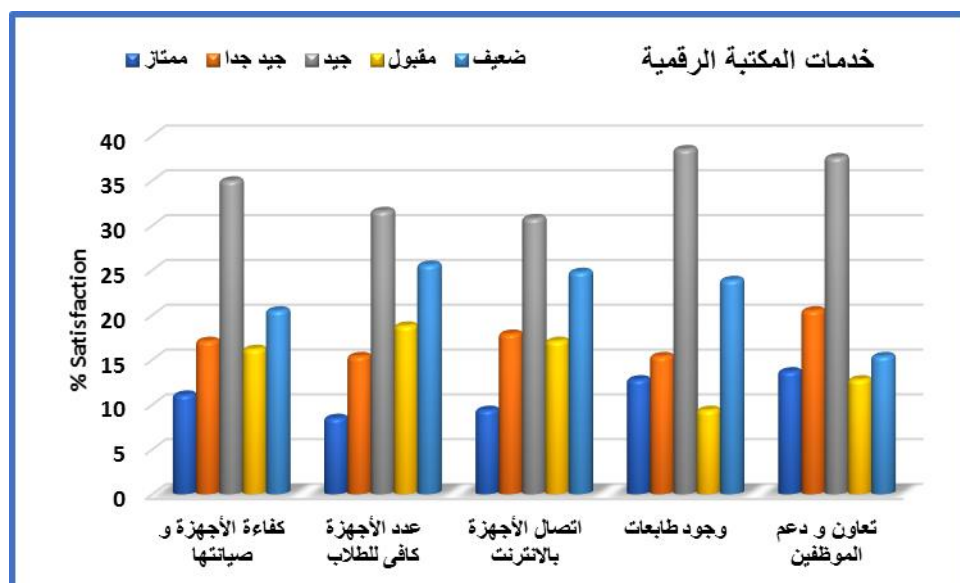
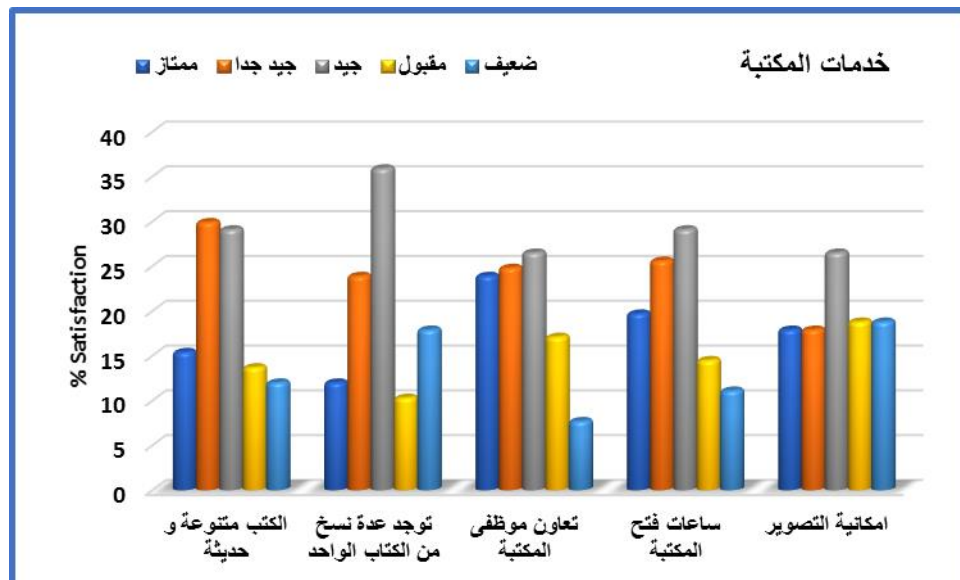
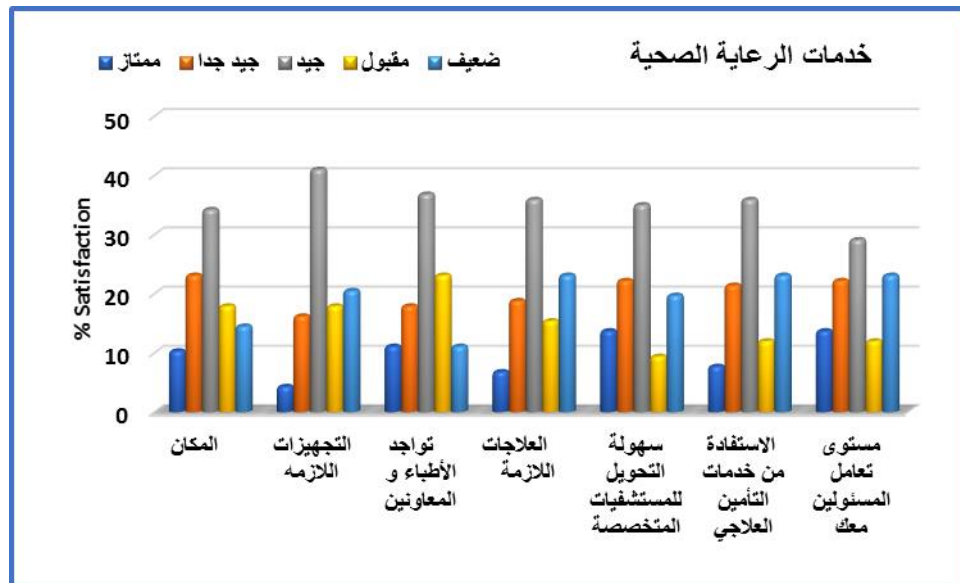


Fig. 7: Students satisfaction about the adequacy of support services.

During Covid-19 pandemic since 15 March and sustainment of physical teaching: academic support was done through Email and Whatsapp groups and student activities were cancelled.

C. Learning Resources:

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

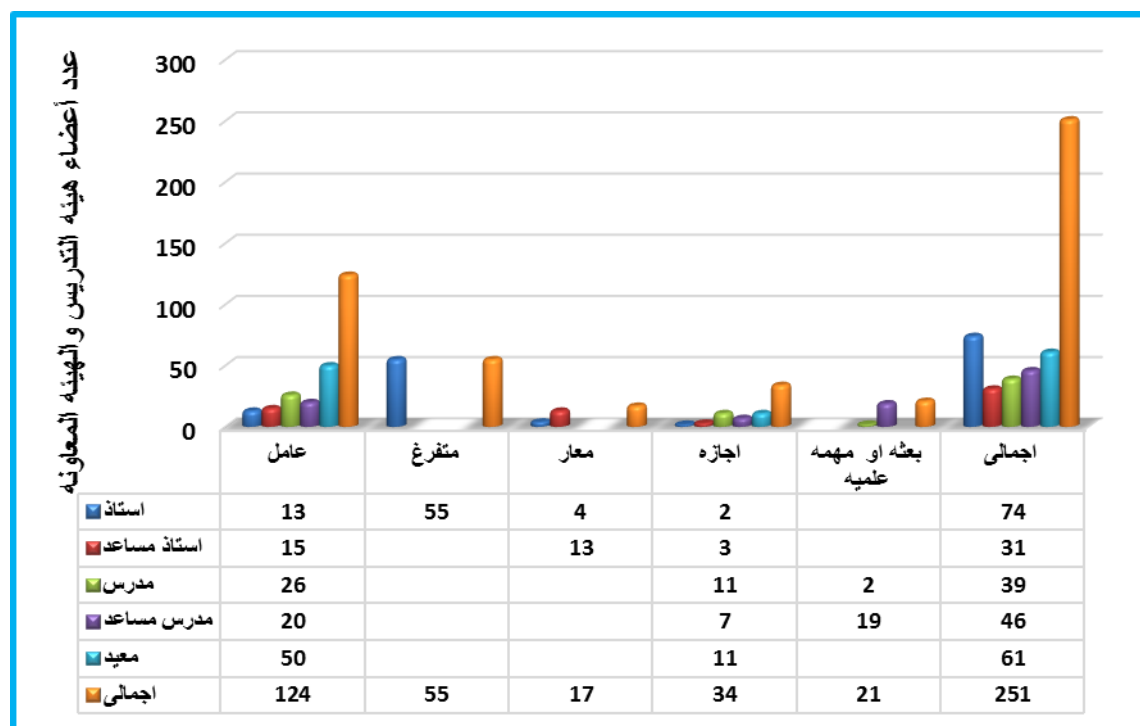


Fig. 8: Total number of teaching staff members and assistants (2019-2020).

Teaching staff/assistants	No. of faculty members and Teaching assistants	No. of Students	Staff / students ratio
Pharmacy teaching staff	109	1182	1:10
Pharmacy+ external teaching staff	109 + 59 = (138.5)		1 :8.5
Assistants	70		1:16
Assistants + external assistant staff	70 + 52 = (96)		1:12.3

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 program handbook.

In fact, an electronic program handbook is available for students (all grades) containing courses intended learning outcomes and assessment methods as well. Likewise, a student guide was available in the students affairs and youth care office, describing the infra structure of the college, structure and location of each department, faculty members, faculty utilities, admission policies, student support system as well as the different faculty activities and achievements.

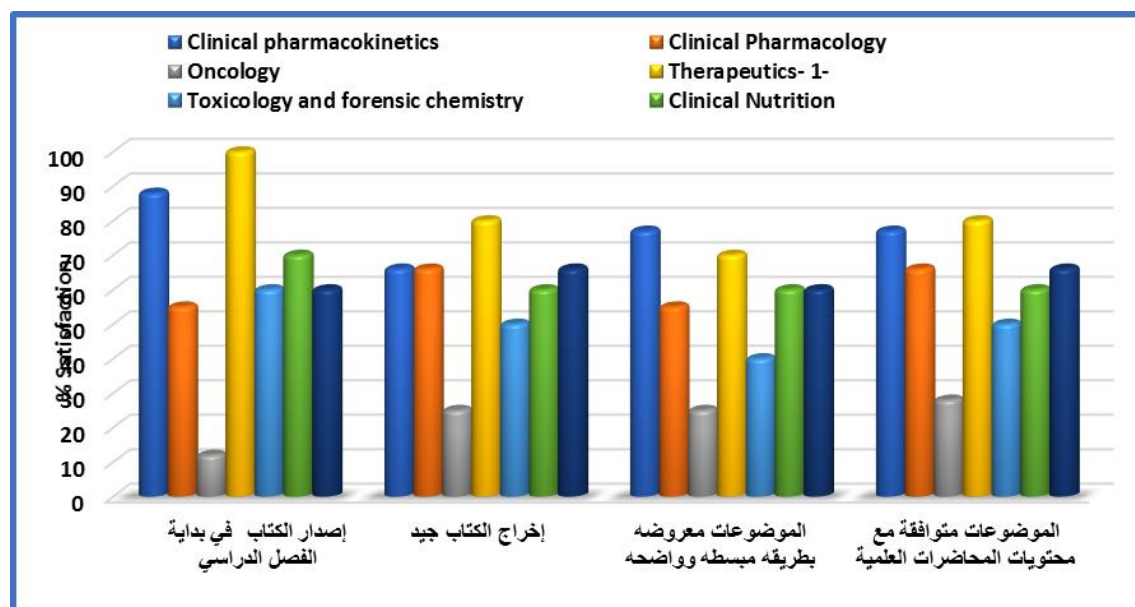


Fig. 9: Fifth year Students satisfaction about lectures handouts of first term.

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 5 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 hall in the pharmaceuticals department (pharmaceuticals periodical & thesis).
- v- 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 6149 English and 283 Arabic textbooks in different specialties of pharmacy.
- ii- 6079 English periodical's volumes
- iii- 1113 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

	2017-2018	2018-2019	2019-2020
Budget in Egyptian pounds	18,000	16,000	16.000

V. Laboratories and teaching halls:

- i- Each department has a number of laboratories (Total = 23) 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 4 air-conditioned classrooms, well seated, lighted and aeriated. They are equipped with data shows and sound systems.
- v- Establishment of new 3 teaching classes and 3 laboratories assigned for clinical pharmacy students

VI. Educational Pharmacy:

- The faculty has one educational pharmacy of 25 students capacity, equipped with a refrigerator, white board and a data show. It is suitable for simulation of the real community pharmacy setting.

VII. Adequacy of computer facilities:

- The faculty has an e-library containing 30 computers with 13 printers.
- Drug design lab devoted to Medicinal chemistry department was established with capacity of 27 computers
- Simulation lab devoted to pharmacology and toxicology department was established with a capacity of 24 computers

VIII. Adequacy of Field / Practical Training Resources.

As mentioned before, the structure of the program includes mandatory 300 hours summer training divided into two phases. Phase 1:

After 3rd Level, the student spends 200 hour in any pharmacy setting.
Phase 2: After 4th Level, the student spends 100 hours divided into 8 clinical rotations.

The faculty had an agreement with Zagazig University Hospital to facilitate the training process. The training is conducted under the faculty and university hospital supervision and there are measures taken to insure its value and effectiveness such as attendance regulations, daily activities within the hospital , evaluation of student performance and student feedback about the training process.

3. Quality Management.

a. 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
--	--

• 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.	• 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 • A4, A29 should be rephrased as they express higher level than knowledge • B16 expresses only knowledge, B20 is related to general skills not professional skills • The % of pharmaceutical sciences is less than required by NAQAAE • Application of modern teaching methods to achieve the required competencies 2017. As well as modern assessment such as OSCE and student portfolio
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4- Evaluation by stakeholders: graduates and employers (results of surveys are mentioned earlier)

5-Evaluation by customers (students)

- Regarding field training, students evaluated the training process as follows:

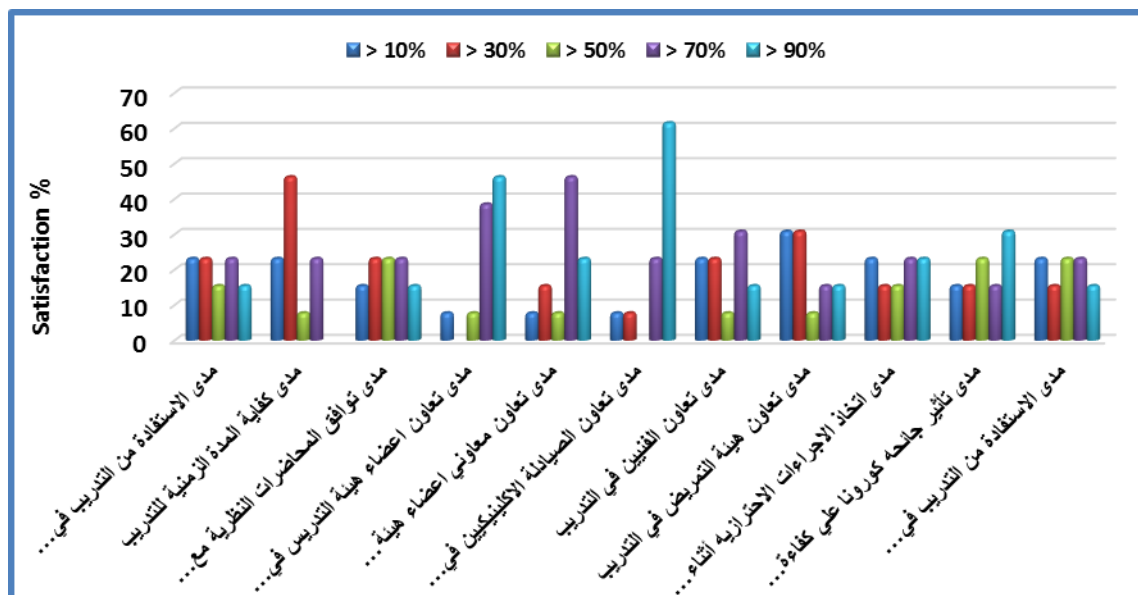


Fig. 10: Students evaluation of field training in Zagazig University Hospital.

b- Effectiveness of the system.

Measures done to sustain the effectiveness of the system:

- 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.
- Development and maintenance of the infrastructure of the faculty to meet the steadily increasing number of students.

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

- The faculty has clear laws and regulations for progression and completion stated in the Bylaws and Regulations for Undergraduate Students, which conforms to the university regulations. Any changes in structure of the program contents should be approved by the Clinical Pharmacy Program Committee, then approved by the Faculty Council then approved by the University Council and get final approval by the Higher Committee of Pharmacy Education.

- 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).

d. 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 and then approved by the faculty council (Faculty council No. 746 , 9/3/2020, No. 753, 13/7/2020)
- Students feedback about the quality of support services was discussed and approved through faculty council No. 741, 9/12/2019 (Additive no of seating was fixed)

4. Proposals for Programme Development.

i. New program implementation:

Bachelor of pharmacy, Clinical pharmacy (pharm D) program was implemented according to MOHE decision No. 4203. Feedback from external reviewers and different stakeholders was used in the design of new program.

ii. Induction of blended learning as a teaching method in faculty regulations: (Faculty council no. 758, 14/9/2020)

iii. Courses modifications:

- Induction of the following new courses/ topics to the program was occurred:
 - ✓ **Bioinformatics**
 - ✓ **Communication skills and Pharmacoeconomics**
 - ✓ **Clinical Research and Pharmacovigilance**

- ✓ Entrepreneurship
- ✓ Scientific writing and communication skills
- ✓ Principles of Quality Assurance
- ✓ Information Technology
- ✓ Professional Practice

5. Staff development requirements

1- Professional training programs are requested based on the results of training questionnaires for staff members:

- Learning outcomes
- Strategic planning
- Interactive teaching methods
- Communication skills
- Management and leader skills
- Thinking skills
- Course specification and report
- Accreditation standards

2- List of attended training programs by the staff members and assistants during 2019– 2020:

A. Organized by the faculty training unit:

اسم الدورة	تاريخ الانعقاد	اسم المحاضر	عدد الحضور
" معايير الاعتماد: الممارسات و المؤشرات لاعداد الدراسه الذاتيه "	2019-9-1	أ.د./ عبدالله الشنواني	33
" معايير الاعتماد: الممارسات و المؤشرات لاعداد الدراسه الذاتيه " الجزء الثانى	2019-9-17	أ.د./ عبدالله الشنواني	59
" واجبات وحقوق اعضاء هيئة التدريس و معاونيهم وحدود التعامل مع الطلاب "	2019-9-23	أ.د./ محمد بركة	54
" اعداد ملف المقرر "	2019/9/29	أ.د./ سحر السويقي	34
" انماط التدريس المختلفه في التعليم الصيدلي "	2019-10-13	أ.د./ عاصم الشاذلي	38
" الادارة العامة بين الواقع وتحديات التطبيق "	2019-10-21	د/ مجدى ثابت د/ بهاء الجبلاوى	65
"قواعد و نظام عمل اللجان العلميه دوره	2019-10-27	أ.د./ عبدالله الشنواني	24

			الثالثة عشر "
25	ا.م. / جيهان فتحى عطيه	2019-11-20	"تقييم الطلاب"
32	د/ محمد نبيل شرف الدين	2019-12- 8	"استراتيجيات جذب وتحفيز الطلاب"

B. Organized by the university training center (FLDP):

عدد الحضور	اسم دوره	عدد الحضور	اسم دوره
2	اداب و سلوكيات المهنة	4	اساسيات المعلومات الحيوية
1	إدارة الجودة فى الرعاية الصحية	6	معايير الجودة
1	اخلاقيات البحث العلمى	10	مهارات العرض الفعال
2	مهارات التفكير الابداعى	5	الساعات المعتمدة
6	نظم الامتحانات و تقويم الطلاب	42	النشر الدولى للبحوث العلميه
2	استخدام التكنولوجيا فى التدريس	8	اعداد المشروعات التنافسيه
5	اداره الازمات والكوارث	14	التحليل الاحصائى SPSS
11	الكتابه العلميه	2	مهارات التفكير الابداعى
3	التخطيط الاستراتيجى	10	التعليم الالكترونى
6	endnote	5	اداره الفريق البحثى
2	مهارات الإتصال الفعال	8	اداره الوقت و الاجتماعات
4	تنظيم المؤتمرات العلميه	2	الجوانب الماليه و القانونيه

6. Action plan:

Action	Person responsible	Completion date
Update the learning and education strategy to cope with the requirements of implementation of competency-based curriculum and e-learning	• Vice dean for education and students affairs • Quality unit • Staff members	August 2020
Professional training for staff members	• Quality unit • FLDP center in Zagazig university	Annual
Implementation of blended learning	• Vice dean for education and students affairs • E-learning unit	September 2020
Program evaluation by different stakeholders: graduates & employers	• Quality unit	Annual
Establishment of Information Technology Unit	• Faculty Dean • Vice dean for education	2020-2021

	and students affairs	
Availability of internet in all teaching halls	• Faculty Dean •	2020-2021
Application of Microsoft Teams as a platform for teaching and assessment	• Vice dean for education and students affairs • E-learning unit	2020-2021
Increase the number of computer labs	• Faculty Dean • Vice dean for education and students affairs	2020-2021

Appendix 1

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

Semester 1:

COURS E CODE	COURSE TITLE	NO. OF UNITS	CREDIT HOURS/ WEEK			PROGRAM ILO'S COVERED
			Lec	Lab	To tal	
PC 101	Physical & Inorganic Chemistry	15	2	1	3	A1, A5, A6, B2, B5, C3,C15, D4, D12
PC 102	Pharmaceutical Organic chemistry -1	15	2	1	3	A1, A8, B2, B6, B17, C6, D1, D4, D10
MD 101	Biophysics	15	1	1	2	A1, A16, B1, B17, C15, D4, D7, D11
PG 101	Botany and medicinal plants	15	2	1	3	A2, A8, B2, B4, C2, C6, D4, D10, D11, D12
MD 102	Cell Biology	15	1	1	2	A1, A17, A18, B1, C15, D10, D11
MS 101	Mathematics and statistics	15	2	--	2	A1, A27, C15,D12
EN 101	English language	15	2	--	2	A1, B1, C16,D1, D12
Total			12	5	17	

Semester 2:

COURSE CODE	COURSE TITLE	NO. OF UNITS	CREDIT HOURS/ WEEK			PROGRAM ILO'S COVERED
			Lec	Lab	Total	
PC 203	Pharmaceutical Organic chemistry-2	15	2	1	3	A1, A8, B2, B6, C6, C15, D4, D11, D12
PC 205	Pharmaceutical Analytical chemistry- 1	15	2	1	3	A1,A27, B2, B5, C3,C6,C15, D4, D12
PG 202	Pharmacognosy-1	15	2	1	3	A2, A8, B2, B4, C2, C6, D4, D10, D11
MD 203	Histology	15	1	1	2	A3, A11, A16, A19, B1, B17, C16, D11, D12
PT 201	Physical pharmacy	15	2	1	3	A2, A5,B3, C15, D1, D4, D12
PT 202	Pharmacy orientation	15	1	--	1	A2, A10, A31, B1, C4, D1, D12
HU201	Human rights & fighting corruption	15	2	--	2	A4, D4, D9, D12
Total			12	5	17	

Semester 3:

COURSE CODE	COURSE TITLE	NO. OF UNITS	CREDIT HOURS/ WEEK			PROGRAM ILO'S COVERED
			Lec	Lab	Total	
PC 304	Pharmaceutical Organic Chemistry-3	15	2	1	3	A1, A5,A8, B2, B6, C6, D12
PC 306	Pharmaceutical Analytical Chemistry-2	15	2	1	3	A2, A7, A27,B2, B5, C3, C6, D4, D10
PG 303	Pharmacognosy -2	15	2	1	3	A5,A6, B2, B4, C3, D1,D4, D5, D10
MD 304	Anatomy	15	1	-	1	A3, B1, C15, C16, D11, D12
MD 305	Physiology	15	2	1	3	A3, A16, B1, C11, D4, D10, D11, D12
MD 311	Medical Terminology	15	2	--	2	A2, A18, D1
HU 302	Psychology	15	1	--	1	A4, C16, D4, D9, D12
Total			12	4	16	

Semester 4:

COURSE CODE	COURSE TITLE	NO. OF UNITS	CREDIT HOURS/ WEEK			PROGRAM ILO'S COVERED
			Lec	Lab	Total	
PB 401	Biochemistry-1	15	2	1	3	A3, A16, A17, A20, B2, B11, C15, D4, D7, D10, D11
PG 404	Phytochemistry-1	15	2	1	3	A8, A22, B2, B4,B17, C2, C6, D2, D3, D4, D5, D10, D11, D12
PC 407	Instrumental Analysis	15	1	1	2	A1, A7, B2, B14, C3, C5, D4, D8, D10, D11
PM 401	General Microbiology and Immunology	15	3	1	4	A3, B1, B2, B11, C15, D1, D4, D6, D11
MD 406	Parasitology	15	1	1	2	A3, A19, A20, B1, B7, B11, C10, C15, D1, D12
PT 403	Pharmaceutical dosage forms-1	15	2	1	3	A2, A5, A10, A27, B2, B3, C1, C2, D12
PT 404	Pharmacy legislation	15	1	--	1	A31, C16, D1
Total			12	6	18	

Semester 5:

COURSE CODE	COURSE TITLE	NO. OF UNITS	CREDIT HOURS/ WEEK			PROGRAM ILO'S COVERED
			Lec	Lab	Total	
PO 501	Pharmacology-1	15	2	1	3	A3, A21, A22, B2, B17, C11, C13, D4, D11
PM 502	Pharmaceutical microbiology	15	2	1	3	A2, A15, B1, B2, B15, C2, C9, C10, C16, D1, D2, D4, D8, D11, D12
PT 505	Pharmaceutical dosage forms-2	15	2	1	3	A2, A5, A10, A27, B2, B3, C1, D1, D4, D12
PB 502	Biochemistry-2	15	2	1	3	A3, A17, B11, B17, C3, C15, D4, D7, D11
PG 505	Phytochemistry-2	15	2	1	3	A8, A22, B2, B4, B17, C2, C6, D2, D3, D4, D5, D10, D12
MD507	Pathophysiology	15	2	–	2	A3, A16, A18, A19, A20, A21, C11, C15, D1, D2, D4, D7, D11, D12
PT 506	Pharmacy Administration	15	1	–	1	A4, A28, A29, C14, D4, D6, D8, D9, D10, D12
Total			13	5	18	

Semester 6:

COURSE CODE	COURSE TITLE	NO. OF UNITS	CREDIT HOURS/ WEEK			PROGRAM ILO'S COVERED
			Lec	Lab	Total	
PO 602	Pharmacology-2	15	2	1	3	A2, A21, A22, B2, B17, C11, C15, D4, D11, D12
PT 607	Pharmaceutical technology	15	2	1	3	A11, B3, B14, C2, D12
PP 601	Community pharmacy practice	15	2	1	3	A4, A21, B7, B16, C16, D1, D4, D11
PC 608	Pharmaceutical analysis & quality control	15	2	1	3	A5, A7, A11, B2, B5, C2, C3, D4, D8, D10, D11
PG 606	Quality Control of Herbal Drugs	15	2	1	3	A7, A8, A24, B2, B4, B5, C2, C3, C5, D4, D10, D11, D12
MD 608	Pathology	15	2	1	3	A3, A19, A20, A21, B1, B11, C11, C16, D1, D2, D3, D11, D12
MD 609	First Aid	15	2	–	2	A3, A26, C16, D7, D11
Total			14	6	20	

Semester 7:

COURSE CODE	COURSE TITLE	NO. OF UNITS	CREDIT HOURS/ WEEK			PROGRAM ILO'S COVERED
			Lec	Lab	Total	
PO 703	Pharmacology-III	15	2	1	3	A3, A22, B18, C11, C13, D3, D11, D10
PP 701	Radio-pharmaceuticals	15	1	–	1	A2, A6, A11, A13, A27, B1, C2, C16, D12
PP 702	Clinical pharmacy-1	15	2	1	3	A3, A20, A21, A23, A30, B7, B15, B16, B18, C11, C12, C15, C16, D4, D11, D12
PP 703	Hospital pharmacy	15	2	1	3	A4, A13, A27, B2, B3, C2, C13, D1, D4, D12
PT 710	Controlled drug delivery systems	15	2	–	2	A5, A10, C1, D7, D11, D12
PC 709	Medicinal chemistry-1	15	2	1	3	A2, A7, A8, A27, B2, B5, C3, C5, C6, D4, D10, D11, D12
PM 703	Pharmaceutical biotechnology	15	2	1	3	A6, A8, B1, B10, C6, C8, C16, D1, D2, D4, D8
PM 704	Clinical microbiology	15	2	1	3	A3, A19, B2, B11, C9, C15, D1, D12
Total			15	6	21	

Semester 8:

COURSE CODE	COURSE TITLE	NO. OF UNITS	CREDIT HOURS/ WEEK			PROGRAM ILO'S COVERED
			Lec	Lab	Total	
PP 805	Management of oncological diseases	15	2	1	3	A16, A17, A19, A21, B1, B7, B11, C15, C16, D4, D7, D11, D12
PP 804	Clinical pharmacy-2	15	2	1	3	A4, A20, A21, A22, A23, A30, B7, C11, D1, D4, D12
PT 809	Biopharmaceutics & pharmacokinetics	15	2	1	3	A2, A12, B18, C15, D4, D10, D11, D12
PC 810	Medicinal chemistry-2	15	2	1	3	A9, A22, B2, B5, B17, C2, C3, C5, D2, D4, D11
PB 803	Clinical biochemistry	15	2	1	3	A16, A17, A19, A20, B2, B11, C2, C3, C15, C16, D1, D2, D4, D11, D12
PP 806	Drug marketing	15	1	–	1	A4, A29, C15, D1, D2
MD 810	Public health & preventative medicine	15	2	–	2	A3, A14, A16, C9, C10, D1, D2, D12
PE	Elective course	15	1	1	2	
Total			14	6	20	

Semester 9:

COURSE CODE	COURSE TITLE	NO. OF UNITS	CREDIT HOURS/ WEEK			PROGRAM ILO'S COVERED
			Lec	Lab	Total	
PO 904	Toxicology and forensic chemistry	15	2	1	3	A3, A25, B2, B12, B13, C11, D4
PO 905	Therapeutics- 1	15	2	1	3	A20, A21, A23, B7, B16, C11, C13, D1, D2, D4, D11
PP 907	Clinical pharmacokinetics	15	2	1	3	A12, B8, C12, D7, D12
PG 907	Phytotherapy	15	2	1	3	A2, A5, A22, A24, B7, B16, C6, C13, C16, D2, D4, D11, D12
PP 904	Clinical nutrition	15	1	1	2	A3, A16, A19, A24, B8, B9, B16, C11, D1, D4, D5, D7, D11, D12
PO 906	Drug interactions	15	2	–	2	A22, A23, B1, B16, C11, C13, C16, D10, D12
HU 903	Sociology	15	1	–	1	A4, C16, D1, D4, D8, D12
PE	Elective course	15	1	1	2	
Total			13	6	19	

Semester 10:

COURSE CODE	COURSE TITLE	NO. OF UNITS	CREDIT HOURS/ WEEK			PROGRAM ILO'S COVERED
			Lec	Lab	Total	
PO 007	Therapeutics-2	15	2	1	3	A21, A22, B7, B8, B18, C11, C13, D1, D12
PP008	Treatment of dermatological and reproductive tissue	15	1	1	2	A16, A18, A19, B1, B7, B8, B17, C15, C16, D2, D12
PP009	Treatment of pediatrics diseases	15	2	1	3	A16, A18, A19, A21, B7, B11, B16, C1, C16, D1, D4, D7, D11, D12
PP010	Treatment of cardiovascular diseases	15	2	1	3	A18, A19, B7, B8, B16, C15, C16, D1, D12
PP011	Gastroenterology	15	2	1	3	A16, A18, A19, A20, A21, B11, B16, C10, C15, C16, D4, D10, D11, D12
PP012	Treatment of respiratory system diseases	15	2	1	3	A16, A19, A21, B7, B11, B15, B16, B17, C15, C16, D1, D2, D4, D7, D8, D11, D12
PP013	Drug information	15	1	–	1	A4, A29, B16, B17, C14, C15, C16, D2, D12
PE	Elective course	15	1	1	2	
Total			13	7	20	

Elective courses:

Code No.	Course title	PROGRAM ILO'S COVERED
PC E11	Drug design	A2, A9, B2, B17, C7, D2, D4, D6, D11
PC E12	Advanced pharmaceutical analysis spectroscopy	A2, B5, C5, D1, D2, D4, D11
PG E8	Alternative medicinal therapies	A2, A24, B15, C1, D1, D3, D7
PG E9	Production & manufacture of medicinal plants	A11, B2, B5, C6, D6, D7
PG E10	Chromatography and separation techniques	A2, A8, B6, B17, C3,, C5, C6, D4, D10, D11
PT E10	Quality assurances and GMP	A2, A7, A11, B14, C2, D12
PT E11	Applied industrial pharmacy	A2,A11,B2, B3, B14,C2, D1, D4
PT E12	Good manufacturing practices	A1, A11, B1, B2, B3, B14, C3, D3, D6, D7
PT E13	Cosmetic preparations	A2, A6,A10,B2, B3, C1, D1,D4
PM E5	Biological standardization	A2, A6, A8,A27, B2,B6, C6, D7, D8, D11
PM E6	Antimicrobial agents	A3, B8, C11,D1, D7, D8, D11
PO E9	Veterinary pharmacology	A3, A22, D4, D11

	Total contact hours	PROGRAM ILO'S COVERED
Summer training	300 hr	A3, A4, A5, A6, A10, A13, A14, A21, A22, A23, A24, A26, A28, A29, A30, A31 B1, B2, B3, B7, B8, B9, B12, B15, B16, B18 C1, C4, C11, C12, C13, C16 D1, D4, D6, D7,D8, D10, D11, D12

Appendix 2

Course reports of 2019/2020