



STUDY PROGRAMME: PHARMACY

Study domain	Level (BA/MA)	Study programme	Study year	Semester	Course title and brief description	Lecture hours/semester	Lab or clinical hours/semester	Credit units
Health	BA	Pharmacy	1	1	<u>Human Anatomy</u> Introduction to Human anatomy. A brief history. The Musculoskeletal System. The Gastrointestinal System. The Respiratory System. The Cardiovascular System. The Urinary System. The Reproductive System. The Nervous System. The Endocrine System. Sense Organs.	28	28	4
Health	BA	Pharmacy	1	1	<u>Cellular & Molecular Biology</u> Cell structure. Molecular organization of the cell membrane. Membrane transport system. Cytosol and cytoskeleton structure and function. Cell motility. Organelles involved in cell synthesis and cell secretion. Energy related organelles. Organelles involved in intracellular digestion. Cell nucleus. Chromatin and chromosomes. Cell cycle and cell division. Extracellular matrix. Cell differentiation and cell aging. Cancer cell.	28	28	4
Health	BA	Pharmacy	1	1	<u>General and inorganic Chemistry</u>	28	28	5

					Introduction to Chemistry. Atomic structure. Electronic configuration, periodic system of elements, periodicity law, periodic physical properties, periodic chemical properties. The states of matter. Chemistry laws. Chemical bonds. Hydrogen. Natural state, preparation, physical properties, chemical properties, isotopes, hydrides. 18th group of the periodic system. Group characterization. 17th group of the periodic system. Group characterization. Halogen compounds. 16th group of the periodic system. Group characterization. Oxygen. Oxides. Sulfur and selenium. Sulfur compounds with hydrogen. Oxo-sulfur compounds. 15th group of the periodic system. Group characterization. Nitrogen and phosphorus. Nitrogen compounds with hydrogen and oxygen. Phosphorus compounds with hydrogen and oxygen. 14th group of the periodic system. Group characterization. Carbon. Carbon compounds with hydrogen, oxygen and other elements. 13th group of the periodic system. Group characterization. Boron. Boron compounds with hydrogen, oxygen and other elements.			
Health	BA	Pharmacy	1	1	<u>Pharmaceutical Physics</u> Mechanics. Molecular physics. Thermodynamics. Nuclear physics	28	28	5
Health	BA	Pharmacy	1	1	<u>Pharmaceutical Botanics</u> Plant cell structure (cytoplasm, endoplasmic reticulum, ribosomes, mitochondria, Golgi apparatus, lysosomes, nucleus, ergastic inclusions, cellular wall). Vegetal histology . Organography.	28	28	5
Health	BA	Pharmacy	1	1	<u>Medical Informatics & Biostatistics</u> Probability notions. Basic probability formula. Random variables: discrete / continuous probability distributions; distribution function, distribution density;	28	28	3

					graphs, histograms; initial / centered moments; quintiles. Statistical data analysis. Statistical tests and assumptions. Applications.			
Health	BA	Pharmacy	1	1	<p><u>Modern Languages</u></p> <p>English Language The differences between the Romanian and the English system of tenses. The differences between the Simple and Continuous tenses in the English language. How to use Perfect Simple tenses and how to use Perfect Continuous tenses. Passive Voice VS Active Voice and modal verbs.</p> <p>French Language Daily communication. Elements of French culture and civilization. Professional Communication. Practicing French.</p>	-	28	2
Health	BA	Pharmacy	1	1	<u>Physical Education</u>	-	28	2
Health	BA	Pharmacy	1	2	<p><u>Human Physiology</u> Blood physiology. Cardiovascular physiology. Respiratory Physiology. Gastrointestinal physiology. Renal physiology. Reproduction physiology. Endocrine system physiology. Nervous system physiology. Sensory system physiology. Muscular system physiology.</p>	42	28	5
Health	BA	Pharmacy	1	2	<p><u>General and inorganic Chemistry</u> Characteristics of Metals. Metal production. Group 1 metals of the Periodic Table. Group 2 metals of the Periodic Table. Group characterization. Group 13 metals of the Periodic Table. Group 14 metals of the Periodic Table. Group 15 metals of the Periodic Table. Group characterization. Group 3 metals of the Periodic Table. Group 4 metals of the Periodic Table. Group 5 metals of the Periodic Table. Group 6 metals of the Periodic Table. Group 7 metals of the Periodic Table. Group 8, 9, 10</p>	28	28	4

					metals of the Periodic Table. Group 11 metals of the Periodic Table. Group 12 metals of the Periodic Table. Group characterization.			
Health	BA	Pharmacy	1	2	Pharmaceutical Physics Optics. Quantum Mechanics. Spectroscopy	28	28	4
Health	BA	Pharmacy	1	2	Medical Terminology Introduction to Medical Terminology. Medical and pharmaceutical terminology concept. Physician-pharmacist-patient relationship related terms. Etymology of common terms. Abbreviations and symbols used in the medicine documentation. Terms and abbreviations used in medical prescription. Medical terminology and human anatomy. Disease related medical terms.	14	14	2
Health	BA	Pharmacy	1	2	Analytical Chemistry Introduction to Analytical Chemistry. Role of Analytical Chemistry for Pharmaceutical Education and the Drug Industry. Reactions and analytical reagents. Solutions. Electrolyte solutions. Ion properties. Chemical equilibrium and its importance for analysis. Protolytic balances. Balances in heterogeneous system. Electron exchange equilibrium. Ion and ion exchange equilibrium	28	28	3
Health	BA	Pharmacy	1	2	Pharmaceutical Botany Historical review of medicinal plant usage. Introduction to Plant Systematic. Division Tracheophyta. Group Pteridophytes. Lycopodiaceae family. Equisetaceae family. Dryopteridaceae family. Group Spermatophyta. Dicotyledonatae class. Monocotyledoneae class.	28	28	4
Health	BA	Pharmacy	1	2	Modern Languages English Language The comparison degrees of the adjective and of the adverb; ways of forming adverbs from adjectives; the	-	28	2

					noun; word formation . Phrasal verbs; specific activities for enriching the vocabulary. Collocations in English; specific activities for enriching the vocabulary. Enriching vocabulary by reading articles from different fields of activity. Writing in different styles: letters, official letters, essays, articles, reports and short stories. <u>French Language</u> Daily communication. Elements of French culture and civilization. Professional Communication. Practicing French.			
Health	BA	Pharmacy	1	2	<u>Physical Education</u>	-	28	2
Health	BA	Pharmacy	1	2	<u>Specialized Practice</u> Pharmaceutical utensils and pharmacy packaging. Pharmaceutical manufacturing operations. Herbal medicinal products and herbal substances. Identification and recognition of medicinal plant species.	-	60	2
Health	BA	Pharmacy	1	2	<u>Pharmaceutical Propedeutics</u> Milestones in pharmaceutical history. Pharmaceutical laws and regulation. Romanian Pharmacopoeia. Drug therapy – general notion. Drug classification. Drug Activity and Toxicity. Therapeutic drug monitoring. Therapeutic methods: allopathy and homeopathy. Medical prescription. Drug preparation. Pharmaceutical forms.	14	-	2
Health	BA	Pharmacy	2	1	<u>Microbiology</u> History of Microbiology. Romanian microbiology. Characteristics of the prokaryotic cell. Classification of microorganisms. Nutrition, growth and multiplication of bacteria. Bacterial genetics. Bacterial Pathogenicity.	28	28	4

					Microbial epidemiology. Non-specific immunity. Specific immunity. Antigen. Antibodies. Cells involved in humoral and cellular immune response. Hypersensitivity reactions: I, II, III and IV. Antibiotics. Biological products. Non-antibiotic antibacterial agents.			
Health	BA	Pharmacy	2	1	<u>Pathophysiology</u> Basic concepts in pathophysiology. Organism response to stimuli. Pathophysiology of thermoregulation. Pathophysiology of protein metabolism disorders. Pathophysiology of lipid metabolism disorders. Pathophysiology of glucide metabolism disorders. Pathophysiology of acid base imbalance. Pathophysiology of fluid and electrolyte imbalances. Pathophysiology of calcium and phosphate metabolism. Pathophysiology of shock. Pulmonary pathophysiology. Renal pathophysiology. Liver failure	28	28	5
Health	BA	Pharmacy	2	1	<u>Organic Chemistry</u> Introduction to Organic Chemistry. Isomerism of organic compounds. Spectral methods for organic compounds. Classification of organic compounds. Unsaturated hydrocarbons. Alkyne. Halogenated compounds. Hydroxylic combinations. Organic combinations of sulfur. Nitrogen compounds. Carbonyl compounds.	28	42	5
Health	BA	Pharmacy	2	1	<u>Physical Chemistry</u> Structure and properties of matter. Energetics and thermodynamic stability. Electrochemistry	28	28	5
Health	BA	Pharmacy	2	1	<u>Analytical and Instrumental Chemistry</u> Introduction to Analytical and Instrumental Chemistry Theoretical basis of gravimetric analysis. Errors. Result evaluation and interpretation. Theoretical basis of volumetry. Volumetric analysis. Titration. Strong acids and strong bases. Titration of strong acids with weak	28	42	5

					bases. Titration of weak acids with strong bases. Titration of weak acids with weak bases. Non-aqueous titration. Redox titration. Permanganometry. Iodometry. Iodimetry			
Health	BA	Pharmacy	2	1	<u>Bioethics & Deontology</u> The role of ethics in socio-human sciences. Code of ethics history. Ethics Code for Pharmacist. Ethical standards. Professional organization: General principles. Tasks. Members' rights and obligations. Main executive and legislative bodies. Specialized committees responsibilities. Disciplinary & Dispute resolution procedures. Patient rights. Good pharmaceutical practice rules.	28	28	4
Health	BA	Pharmacy	2	1	<u>Physical Education</u>	-	28	2
Health	BA	Pharmacy	2	2	<u>Microbiology</u> General concepts of Virology. Influenza infection. HIV infection. Hepatitis. Introduction to Parasitology. Classification of parasites. Parasitic Protozoa. Amoebas. Flagellates. Ciliates. Sporozoa. Cestodes . Trematodes. Nematodes. Ectoparasites. (Sarcoptes scabiei, Pediculidae). Antiparasitic drugs - mechanisms of action, indications, side effects. Candida, Cryptococcus. Hyaline fungi. Antifungal drugs - mechanisms of action, antifungal spectrum, indications, toxicity. Manufacture and quality control of immunological products. Microorganisms that affect the pharmaceutical industry. Microbiological contamination and preservation of pharmaceutical products. Contamination of non-sterile pharmaceutical products in the community environment. Sterilization. Sterilization control and ensuring sterility	28	28	4
Health	BA	Pharmacy	2	2	<u>Organic Chemistry</u>	28	42	5

					Carboxylic compounds. Functional derivatives of carboxylic acids. Hydrohalic acids. Carbonylcarboxylic compounds. Saccharides. Aminoalcohols, aminophenols, aminoaldehydes and aminocetones. Heterocyclic compounds with 5-membered mono- and polyheteroatomic rings. Heterocyclic compounds with 6-membered mono- and polyheteroatomic rings. Polyisoprene skeleton compounds. Alkaloids. Structure - Properties Relationship.			
Health	BA	Pharmacy	2	2	<u>Immunology</u> Immunology - Introductory Topics; Terminology. Cellular and humoral components of the Immune System. Antigens. Immunoglobulins. The complement system. The major histocompatibility complex. Cellular distribution and MHC I and MHC II structure. Immune response. Immune response modulation. Immunological tolerance. Hypersensitivity - definitions, classification, general notions. Hypersensitivity to inhaled antigens. Food hypersensitivity. Type IV hypersensitivity. Autoimmunity and autoimmune diseases. Immunodeficiency.	28	28	4
Health	BA	Pharmacy	2	2	<u>Physical Chemistry</u> Chemical kinetics. Drug Chemical Stability. Physical phenomena kinetics. Interphase phenomena. Colloidal dispersion systems. Collateral (heterogeneous) pharmaceutical dispersion systems	28	42	5
Health	BA	Pharmacy	2	2	<u>Analytical and Instrumental Chemistry</u> Instrumental methods of chemical analysis. Steps of a chemical analysis. Electrochemical analytical methods. Spectral analysis methods. Classification. Spectrometry.	28	42	5

					Emission spectrochemical methods. Refractometry and polarimetry. Methods of separation. Chromatographic methods. Electrophoretic methods			
Health	BA	Pharmacy	2	2	<u>Public Health</u> Introduction to Public Health. Education for health promotion. Health and social problems of the elderly. Principles of epidemiology. Health systems. Quality of health services. Primary health care. Hospital care. Current priority health issues in Romania. Health Insurance System in Romania. Specific health legislation. Healthcare management.	28	28	3
Health	BA	Pharmacy	2	2	<u>Specialized Practice</u> Organization of public pharmacy (hospital or pharmaceutical store). Pharmaceutical legislation. Product categories. Qualitative and quantitative assessment methods for drugs. Pharmacy equipment. Basic Operations of Pharmaceutical Practice. Magistral prescription. Prescription charges	-	60	2
Health	BA	Pharmacy	2	2	<u>Ethics and academic integrity</u> Fundamental concepts and distinctions. Moral, immoral, non-moral. Moral principles, values and rules. Moral autonomy and personal responsibilities. Immoral behavior in the university.	14	-	2
Health	BA	Pharmacy	3	1	<u>Medical semiology. Clinical pathology</u> General Physical Examination. Cutaneous semiology. Semiology of Respiratory System. Semiology of Cardiovascular System. Semiology of Gastrointestinal System. Semiology of Urinary Tract. Semiology of Musculoskeletal System. Semiology of Nervous System. Semiology of Hematopoietic System.	28	28	5
Health	BA	Pharmacy	3	1	<u>Pharmaceutical Chemistry</u>	28	42	5

					Pharmaceutical auxiliary substances. Antiseptics and disinfectants. Chemotherapeutic agents.			
Health	BA	Pharmacy	3	1	<u>Pharmaceutical Biochemistry</u> Introductory notions. Acid-base balance. Hydroelectrolyte balance. Macro elements. Oligopoly-elements. Iron metabolism. Copper metabolism. Zinc metabolism. Proteins. Nucleic acids. Enzyme biochemistry. Protein metabolism. Amino acids metabolism. Nucleic acids metabolism. Purine and pyrimidine bio-synthesis.	28	42	5
Health	BA	Pharmacy	3	1	<u>Pharmacognosy</u> Introduction to Pharmacognosy. Introduction to Phytotherapy. Glucides and polyuronides. Polyuronides. Simple phenols and phenolcarboxylic acids. Phenylacrylic acid derivatives; depside derivatives. Tannins. Coumarins and chromates. Gingeroli and curcuminoids. Lignin. Flavonoids. Proanthocyanidins and anthocyanidins. Isoflavonoides.	28	42	5
Health	BA	Pharmacy	3	1	<u>Pharmaceutical Technology</u> Introduction to Pharmaceutical Technology. Drugs - pharmaceutical forms; Drug prescription and drug delivery. Drug dosage. Drug stability and drug conservation. Drug overdose. Container closure systems. Solutions. Preparing solutions. Solubilisation. Pharmaceuticals solutions for internal use. Other pharmaceuticals preparations for internal use. Taste masking in pharmaceuticals. Pharmaceuticals preparations for external use. Solvents.	28	42	5
Health	BA	Pharmacy	3	1	<u>Medico – Technical Products</u>	28	14	3
Health	BA	Pharmacy	3	1	<u>Phytotherapy</u>	14	-	2

					Study of medicinal plants and their use for therapeutics purposes. Pharmacodynamic properties of plan. Experimental therapy bases on medicinal plants.			
Health	BA	Pharmacy	3	2	Medical semiology. Clinical pathology Pathology of the respiratory system. Respiratory system diseases. Pathology of the gastrointestinal system. Gastrointestinal system diseases. Liver and bile ducts disorders. Cardiovascular system disease. Urinary system diseases. Female genital system diseases. Male genital system diseases. Musculoskeletal and connective tissue disorders. Ophthalmologic disorders. Neurologic diseases. Otorhinolaryngological diseases.	28	28	4
Health	BA	Pharmacy	3	2	Pharmaceutical Biochemistry Nucleoproteins. Ammonia metabolism. Lipids. Lipid metabolism. Carbohydrates. Carbohydrate metabolism. Energy metabolism. Biological oxidation. The Krebs cycle. Intermediate metabolisms. Vitamins biochemistry. Enzyme application in diseases diagnosis. Immunoglobulins. Complement system. Liver biochemistry.	28	42	5
Health	BA	Pharmacy	3	2	Pharmaceutical Chemistry Chemotherapeutic agents. Anti-fungal agents. Anti-parasitic drugs. Antibiotics. Antivirals. Antitumoral agents.	28	42	5
Health	BA	Pharmacy	3	2	Pharmacognosy Alkaloids. Akaloids derived from proline. Akaloids derived from tryptophan. Alkaloids derived from phenylalanine. Alkaloids derived from lysine, ornithine and acetyl-CoA. Thioglycosides and cyanogenetic heterosides. Lipids of vegetable and animal origin. Cardiotonic Heterosides. Sterol and triterpenic saponosides. Volatile oils. Non-volatile terpenes.	28	42	5

Health	BA	Pharmacy	3	2	<u>Pharmaceutical Technology</u> Parenteral medication. Formulation of parenteral products. Injectable drugs. Quality control parameters of injectable drugs. Pharmaceutical technology for preparation of injection solutions. Infusion preparations. Vaccines and serums. Radiopharmaceuticals. Ophthalmic preparations. Preparations obtained by extraction	28	42	5
Health	BA	Pharmacy	3	2	<u>General Pharmacology</u> General pharmacology: definition; pharmacology branches and divisions. Drugs: definition; classification; names; drug doses. General pharmacokinetics. Membrane transport. Drug absorption. Drug transport. Drug diffusion. Drug distribution to tissues. Bio-transformation of drugs. Drug elimination. General pharmacodynamics. General pharmacotoxicology.	28	28	4
Health	BA	Pharmacy	3	2	<u>Specialized Practice</u> Organization of public pharmacy (hospital or pharmaceutical store). Pharmaceutical legislation. Classification of medicinal products. Magistral prescription. Pharmaceutical products for internal use. Pharmaceutical products for external use. Sterile pharmaceutical products. Phytopreparations. Food supplements. Ethics and pharmaceutical deontology.	-	60	2
Health	BA	Pharmacy	4	1	<u>Therapeutic Chemistry</u> Central nervous system drugs. General anesthetics. Sedative – hypnotic drugs. Tranquilizers. Anti-psychotics. Anticonvulsants. Anti – Parkinson drugs. Antidepressants. Myorelaxants. Central nervous system stimulants. Neurotonic agents. Opioid analgesics. Analgesics – antipyretics. Non-steroidal anti-inflammatory drugs. Local anesthetics.	28	42	5

Health	BA	Pharmacy	4	1	<u>Pharmaceutical Technology</u> Colloidal dispersions. Aerosols for the respiratory tract. Emulsions. Emulsifiers. Suspensions. Suspension agents. Ointments. Ointment bases. Ointment Preparation. Quality control of ointments. Rectal suppositories. Water-soluble excipients. Industrial production of suppositories. Vaginal preparations	28	28	5
Health	BA	Pharmacy	4	1	<u>Biological Drugs</u> Biological Therapy. Manufacture of biological medicinal products for human use. Safety and surveillance of biological drugs. Genetic engineering. Biological Therapy and Immunoprophylaxis. Opothrapy. Insulin. Recombinant human growth hormone. Biological Therapy in Autoimmune Diseases. Biological drugs with anti-neoplastic action.	28	14	2
Health	BA	Pharmacy	4	1	<u>Pharmacology</u> Drug that affect the autonomic system. Central nervous system drugs. Drugs used in Anesthesia. Medicines used in analgesia.	28	28	6
Health	BA	Pharmacy	4	1	<u>Scientific Research Methodology</u> Purpose, justification, qualities and stages of a research study. Preparing the research study. Bibliographic documentation. Defining the phenomenon. Formulation of the topic of study. Managerial aspects. Project elaboration. Collecting information. Target population. Sample. Types of data collection. Methods of data collection. Research Tools. Data processing. Processing tools. Descriptive statistics. Inferential statistics. Frequency measures. Indicators. Data analysis and interpretation. Statistic results interpretation. Errors.	14	14	2

					<p>Presentation of research results. Tables. Graphics. Writing. Structure of an article. Bibliography (list of references, quote in text). Oral presentation of a scientific paper.</p> <p>Ethics in research. Principles of Ethics in scientific research on human subjects. Ethics in scientific research on animals. Ethics in statistical data processing.</p>			
Health	BA	Pharmacy	4	1	<p><u>Chemistry and Hygiene of the Environment</u></p> <p>Chemical equilibrium. Law of mass action. Electrolytes. Protolytic equilibrium in salt solutions. Atmosphere, composition and structure. Air pollution. Characteristics of major air pollutants. Acid rain. The Water. Control and monitoring of water quality. The soil. Soil pollution. Major sources of soil pollution.</p>	28	28	4
Health	BA	Pharmacy	4	1	<p><u>Pharmaceutical Legislation</u></p> <p>Pharmaceutical legislation. Pharmacist and pharmaceutical professional organization. Rules of ethics and pharmaceutical deontology. Pharmaceutical units and health system.</p>	14	14	2
Health	BA	Pharmacy	4	1	<p><u>Clinical Laboratory</u></p> <p>Hormone biochemistry. Hypothalamic hormones. Pituitary hormones. Thyroid hormones. Adrenal Hormones. Pancreatic hormones. APUD system. Interferons. Exploring hemostasis. Diagnosis of production and destruction of red blood cells. Biochemical exploration of the liver. Biochemical exploration of the kidney.</p>	28	14	2
Health	BA	Pharmacy	4	1	<p><u>Dermatopharmacy & Cosmetology</u></p> <p>European legislation in the field of cosmetic production. Skin structure. The structure of the epidermis. The structure of the dermis. Structure of the hypoderm. Skin functions. Skin micro-flora. Skin Immunity. Natural</p>	14	-	2

					photo-protection and cosmetic photo-protection. Seborrheic syndrome and acne. Skin aging. Skin penetration. Dermatological medication. Hair care products. Evaluating the efficacy of a cosmetic product			
Health	BA	Pharmacy	4	2	<u>Therapeutical Chemistry</u> Autonomic drugs. Cardiovascular drugs. Diuretic drugs. Histamine: agonists and antagonists. Respiratory drugs. Gastrointestinal drugs. Anti-diabetics.	42	42	6
Health	BA	Pharmacy	4	2	<u>Pharmaceutical Technology</u> Powders properties. Pharmaceutical operations. Granules. Medicinal capsules. Tablets. Solid oral modified release products. Solid oral controlled release products. Oral therapeutic systems	28	42	5
Health	BA	Pharmacy	4	2	<u>Bio-pharmacy</u> Basic concepts of bio-pharmacy. Drug bio-availability. Drug bio-equivalence. Bio-equivalence studies. Chronopharmacology. Drug interactions. Drug food interactions. Pharmacovigilance.	28	14	2
Health	BA	Pharmacy	4	2	<u>Toxicology</u> Definition of toxicology. Classification of toxic substances. Classification of poisonings. Factors affecting toxicity. Toxicokinetics. Toxic effects. Reducing toxic effects of substances. Elimination of toxins. Antidotes. Isolation of toxic substances. Identification and quantification of toxic substances.	28	42	5
Health	BA	Pharmacy	4	2	<u>Pharmacology</u> Cardiovascular drugs. Hematopetic drugs. Renal drugs. Antibiotherapy. Gastrointestinal drugs. Anti-tuberculosis drugs. Histamine: agonists and antagonists. Metabolic drugs. Endocrine drugs. Anti-inflammatory drugs.	28	28	5

Health	BA	Pharmacy	4	2	<u>Specialised Practice</u> Organization of public pharmacy (hospital or pharmaceutical store). Pharmaceutical legislation. Classification of medicinal products. Magistral prescription. Pharmaceutical products for internal use. Pharmaceutical products for external use. Sterile pharmaceutical products. Phytopreparations. Food supplements. Ethics and pharmaceutical deontology	-	90	3
Health	BA	Pharmacy	4	2	<u>Environmental Chemistry and Hygiene</u> Air Hygiene. Water Hygiene. Waterborne diseases. Drinking water quality. Hygiene of water supply. Soil hygiene. Radiation hygiene. Hygiene of human habitat. Hygiene of food. Hygiene of food units and educational units. Childhood and adolescence hygiene.	28	42	4
Health	BA	Pharmacy	5	1	<u>Drug Industry</u> Drug discovery. Drug development. Drug formulation development. Optimization in drug research. Drug product registration and marketing authorization. Pilot stations. Pharmaceutical production. Drug manufacturing technology. Material of construction for pharmaceutical and biotechnology process. Corrosion prevention methods. Rules related to good pharmacy practice.	28	28	4
Health	BA	Pharmacy	5	1	<u>Drug Analysis</u> National drug control policy. Drug control laws and regulations. Stability testing of pharmaceutical products. Analysis and impurity identification in pharmaceuticals. Drug identification. Drug dosage. Quality control methods.	28	42	4
Health	BA	Pharmacy	5	1	<u>Clinical Pharmacy</u>	28	28	4

					Introduction to Clinical Pharmacy. General clinical pharmacotherapy. Prescription analysis. Therapeutic drug monitoring. Patient counseling and provision of drug information. Adherence to treatment. Treatment fidelity. Therapeutic compliance. Drug iatrogenicity. Drug interactions. Particularities of pharmacotherapy during pregnancy. Symptomatic primary care. Rational use of antibiotics. Drug Therapy in Infections. Treatment of diarrheal disease. Treatment of nausea and vomiting. Treatment of gastro-duodenal ulcer and gastroesophageal reflux. Principles of nutrition.			
Health	BA	Pharmacy	5	1	<u>Accounting, management and pharmaceutical Accounting</u> Economics of information system. Forms of economic evidence. Documenting of economic operations. Preparation of annual financial statements. Accounting records. Value added tax.	28	28	4
Health	BA	Pharmacy	5	1	<u>Toxicology</u> Addictions. Hallucinogen toxicology. Alkaloids toxicology. Cardiac glycosides toxicology. Toxicology of non-hetero-cyclic drugs. Toxicology of hypnotic and sedative drugs. Toxicology of antidepressants. Toxicology of antimicrobial agents. Toxins.	28	42	5
Health	BA	Pharmacy	5	1	<u>Pharmaceutical Management and Marketing</u> Introduction to management. Managerial Process. Principles of management. Pharmacy management. Pharmaceutical legislation. Introduction to marketing. Marketing concepts for pharmaceutical practice development. Medicine price. Drug promotion. Drug distribution. Drug policies. Marketing Management	28	14	3
Health	BA	Pharmacy	5	1	<u>Medical Emergencies</u>	14	14	4

					Acute respiratory failure. Treatment of respiratory emergencies. Acute dyspnea. Acute thoracic pain. Congestive heart failure. Hypertensive emergencies. Arrhythmic emergencies. The shock. Neurological emergencies. Acute kidney failure. Acute intoxication. Infectious emergencies. Ethical Aspects in Medical Emergencies			
Health	BA	Pharmacy	5	1	<u>Communication Skills with Patients</u> The concept of social pharmacy. Communication. Methods. Patient counseling. Patient typologies. Pharmacist typologies. Drug delivery. Concept of self – medication. Pharmacist code of ethics.	14	-	2
Health	BA	Pharmacy	5	2	<u>Specialized Practice</u>	-	720	25
Health	BA	Pharmacy	5	2	<u>Work on graduation thesis</u>	-	60	5