

Course Description

7302507- Over-the-Counter Medications (2 credit hours)

Introducing the students to medications that can be dispensed to patients without prescription. These drugs include antacids, anthelmintics, antidiarrhea, laxative products, emetic and anti-emetic drugs; hemorrhoid products; cold, cough and allergy products; asthma products; analgesics and NSAIDS; vitamins and minerals; infant formula products; weight control products; menstrual products, dental products, insect sting and bite products; burns and sunburn products, skin products, infant products, foot care products. This will be in addition to answering questions raised by patients seeking self-treatment concerning symptoms, aspects of patient counseling in the safe and effective use of products dispensed to him/her and side effects of this class of drugs.

7304504- Pharmaceutical Calculations (2 credit hours)

This course will discuss the most important aspects of pharmaceutical calculations required to perform better pharmaceutical services. These calculations include dose adjustment, dilution & concentration, isotonic solution, electrolyte solution, rate of flow of I.V solutions and mathematical conversions.

7309501: Public Health and Epidemiology for Cosmetic Students (2 credit hours)

This course discusses the dimensions of personal and environmental health and its relationship to economic and social conditions, political factors, and measures and indexes of people's health status. This course also discusses the theoretical framework for some organizational issues in the delivery of health services. This course will also cover the study of various pathological and epidemiological cases affecting the skin, hair and nails.

7309502 Principles of hair transplantation (2 credit hours)

This course will introduce the initial diagnosis of hair loss cases and determine their degrees and the donor area (usually the donor area is the area behind or on the sides of the head), and a mechanism will be identified to determine the necessary number of follicles accurately based on the appropriate area and density for each case. In addition, the student will be acquainted with the principles of assessing hair quality in the area in addition to the type of roots and their growth in a straight, curly or wavy condition

7309503: Quality Control of Cosmetics (1 credit hour)

The objective of this course is to provide students with an introduction to specific quality inspection concepts and quality assurance of cosmetic products and cosmetic raw materials. The analytical procedures used and the factors affecting the chemical stability of the product are also covered. This course includes a representative (practical) review of the most important routine examinations on devices available in the department, so that the theoretical aspect is related to the practical side.

7309504: Cosmetics Raw Materials 2 (2 credit hours)

The course aims to provide students with basic knowledge of the main raw materials used in the manufacture of cosmetics, their functions, and techniques for formulating the most important categories of cosmetics that are not covered in the course of Raw Materials I.

7309505: Cosmetic Nutritional supplements (1 credit hour)

This course includes studying the elements, nutritional formulations and their natural sources that the body needs to fight aging and maintain the elasticity and freshness of the skin in addition to the safety of the hair and its vitality for the longest time possible such as collagen, biotin, catechins, natural keratin supplements and other examples. It also deals with an explanation of the body's need for it and the consequences of its deficiency and its interactions on human beauty.

7309506: Training in hair transplant clinics (2 credit hours)

Through these training courses, the student trains the ingredients of the success of the hair transplantation process, in addition to the pattern of roots and their growth in a straight, curly or wavy manner, and we note that the density of the donor area was higher, the better the expectations for the results. After studying and passing the entire previous steps, the transition to the actual work is done, by extracting the hair from the donor area (resistance to the hormone that causes hair loss), and replanting it in the receiving area (the dominance of the donor) which is the basis in the hair transplant process.

7309507: Skin care products II - (3 credit hours)

This course will provide students with elements leading to the understanding that topically applied products can measurably, visibly and quickly affect the skin.

Sunscreens, skin tanning, skin lightening, antiperspirants and deodorants will be addressed.

7309508: Practical Skin care products II - (1 credit hour)

This course will provide students with the basic knowledge and skills to formulate and compound the following preparations: sunscreens, skin tanning, skin lightening, antiperspirants and deodorants.

7309510: Raw materials for cosmetics Lab (1 credit hour)

This course will cover the basic principles of manufacturing natural and synthetic cosmetic active ingredients and raw materials used in cosmetic preparations. For example, solvents, emulsifying agents, waxes, whitening agents and sun light absorbers will be prepared.

10216235: Biostatistics for Medical and Health Sciences students (3 credit hours)

A theoretical compulsory course of three lectures per week aims to provide students with basic knowledge in statistics needed in the field of pharmaceuticals. These skills include reading, analysis, interpretation, and application of research findings. It includes descriptive statistics, sampling methods, statistical inference, analysis of clinical and drug trials including bioequivalence, validation of results, examination of the dissolution of drug forms, standardization of weight and components of drug forms, etc. This course also deals with issues related to some statistical tests to compare the results of two or more groups, such as the T-test, Wilcoxon test, ANOVA and Tukey test. The focus is also on the methods used in the study of epidemiology and discussing the design of the experiment during Development of pharmaceuticals.

10231114: General Chemistry for Health Science (3 credit hours)

A compulsory 3-lecture course that is mainly designed to give students a knowledge of the most important chemical principles such as atomic structure and periodic table, mass relationships in chemical reactions, reactions in aqueous solutions, gases, thermo chemistry, basic chemical facts and theories about solutions, kinetics, dynamic equilibrium, thermodynamics and electrochemistry.

10231115: General Chemistry Lab for Health Science (1 credit hour)

A laboratory compulsory course that includes a set of experiments that include acids and bases, gas law, chemical balance, and chemical dyeing.

10231213: Analytical Chemistry for Health Science (3 credit hours)

A theoretical compulsory course of three lectures per week that includes an introduction to the science of pharmaceutical analysis and focuses on methods of quantitative pharmacological analysis using different standard methods approved by international pharmacopoeias, such as titration methods of all kinds. The course also introduces the student to several technologies used in pharmaceutical analysis and will provide students with the scientific rules necessary to judge the accuracy and correctness of data and readings resulting from pharmaceutical analysis in addition to discussing the correct methods used in the quantitative calculations of the active substance or impurities in medicines.

10231214: Analytical Chemistry Lab for Health Science (1 credit hour)

A laboratory compulsory course that includes a set of experiments. It is designed for the practical application of the principles and theories covered in the theoretical pharmaceutical analysis course. Where the student performs a number of experiments in which several standard methods are used in the analysis of drugs, and the student in this course will be practically trained on how to judge the accuracy and validity of the readings resulting from practical experiments. Many of the methods of analysis that will be applied in this laboratory are methods approved by international pharmacopoeias.

10231236: Organic Chemistry for Health Science (I) (3 credit hours)

A theoretical compulsory course of three lectures per week aims to increase the student's awareness of the fundamentals of pharmaceutical organic chemistry, and to activate the student's understanding of the language of pharmaceutical chemists. This course will discuss cyclic and cyclic hydrocarbons. IUPAC naming principles for pharmaceutical organic compounds. Aliphatic unsaturated hydrocarbons, halogen compounds. Steroidal shapes of pharmaceutical organic compounds. This course also covers the basic techniques used in the synthesis of pharmaceutical compounds. In addition, the substitution and elimination reactions used in the

preparation of pharmaceutical compounds, the mechanisms behind these reactions and their relationship in the chemical manufacture of drugs and other pharmaceutical materials will be covered. This information will prepare the student to study the organic chemistry course 2.

10231239: Organic Chemistry Lab for Health Science (I) (1 credit hour)

A laboratory compulsory course that aims to give students a good understanding of the principles of practical pharmaceutical organic chemistry and the ability to solve problems based on pharmaceutical chemistry. The course also provides the ability to investigate experiments, analyze data, and write scientific reports. The course is divided into two parts: The first includes physical tests used to identify effective drugs. In the second part, the course will cover the basic techniques for the synthesis of bioactive compounds, drugs and adjuvants.

10231313: Instrumental Analytical Chemistry (3 credit hours)

This course is considered complementary to the analytical chemistry course for health sciences, as it deals with a full explanation of the student's instrument about the devices used in the quantitative and qualitative analysis of the active substance and impurities present in pharmaceutical preparations. Emphasis is also placed on the methods adopted by the international pharmacopoeia in pharmaceutical analysis to link the course in the pharmaceutical industrial labor market.

10231314: Instrumental Analysis Lab (1 credit hour)

A compulsory course involves three practical hour laboratory per week. It covers basic instrumental methods used in quantitative chemical analysis, such as: polarimetry, refractometry, pH - titrations, potentiometry, conductometry, electrogravimetry, coulometry and spectrometry.

10231330: Organic Chemistry (II) for Health Science (II) (3 credit hours)

An elective course with three lectures per week and is considered a continuation of the organic pharmaceutical chemistry course I, as this course provides the student with the opportunity to learn the basics of organic chemistry and a sound understanding of aromatic compounds that are used in the manufacture of medicines

and methods of preparing and naming them, in this course the student will study DNA and DNA structures Ribeye. The course also covers a comprehensive study of carbohydrates, proteins and fats and their role in developing therapeutic drugs. The course also includes spectroscopic methods (infrared, ultraviolet, NMR, and MS) used for drug and drug analysis. At the end of the course, the student will be prepared to continue the next phase in the next semester through a medical chemistry course I, which deals with topics related to the structure of drugs and preparations and how to create them.

10236302: Industrial economics and production management (3 credit hours)

An elective 3-lecture course that includes the topics of consumer demand, production, cost, market structures and factors, also it includes introduction to operation management, product design, process analysis, facility layout, forecasting, operations scheduling, quality management and cost studies.

7104101- General biology for health sciences (3 credit hours)

A discussion of biology activity at the level of the single cell. Cell structure. Chemical constituents, material exchanges with the environment and the cell membrane. Major energy generating biochemical pathways. Photosynthesis and control of cellular activities.

7304201: Physical Pharmacy I (3 credit hours)

A compulsory course with three lectures per week describing the physical and chemical foundations of materials and their applications in the pharmaceutical sciences. The course covers several topics, including gaseous, liquid and solid states of matter, the properties of each type of these states, the properties of supercritical fluids, the forces of linking compounds and the phase equilibrium, the laws of thermodynamics, their interpretations and their applications in the field of pharmaceutical sciences. The course also deals with liquids, their types, properties, solubility, ionic balance, buffer solutions, and the phenomenon of distribution. In addition, the laws of the speed of chemical reactions and their relationship to determining the expiration date of drugs and studying the stability of pharmaceutical preparations are recognized.

7304204: Physical Pharmacy Lab (3 credit hours)

A laboratory compulsory course aimed at developing practical laboratory skills of students through the application of practical experiences. This course is a practical application of the theoretical concepts that are discussed in the course of Physical

Pharmacy 1. The course includes several experiments such as preparation of buffer solutions, drug stability and validity date estimation by analyzing the stability acceleration, determining the distribution coefficient, the theories of absorption, dissolution and solubility, phase equilibrium and diffusion, Thermodynamics and other related experiments.

7309101: Cosmetic profession ethics and regulations (1 credit hour)

In this course, it will be emphasized on the nature of the cosmetic profession, its relationship to society, and ways to maintain a high level of progress in addition to identifying the ethics and laws regulating the practice of this profession in Palestine and international cosmetic organizations. Also, the student will learn about the controls and prohibitions with regarding the use of pharmaceutical treatments, medical devices, and others.

7309102: Anatomy of cosmetic students (2 credit hours)

This course covers an introduction to anatomy, histology, anatomy language, and then studies the structure of different systems (the bone, muscular, digestive, circulatory, urinary, reproductive, respiratory and nervous systems). The focus will also be on the different tissues and layers of the skin, as well as their hair, glands and nails.

7309103: Microbiology and sterilization for cosmetic (3 credit hours)

Introduction: discovery of microorganisms, definition of microorganisms, bacterial morphology; Structures of microorganisms: bacteria, viruses, and fungi; Bacterial growth and environmental conditions influencing growth; Microbial genetics and mutagenesis; Biofilm formation and quorum sensing; Sterilization and disinfection; Bacterial metabolism; Host pathogen interaction; Mechanisms of pathogenesis; Common pathogenic microorganisms: spread, route of infection, symptoms, diagnosis and treatments. It also focuses on microorganisms that have a positive or negative role in the overall appearance of skin, hair, and nails.

7309104: Beauty and nutrition (2 credit hours)

This course will introduce the students to the basic principles of micronutrient, functional food and cells metabolism, lipid metabolism; obesity complication and treatment. In addition, it will cover cosmetherapeutical of common foods, diet and

skin aging, vitamins in dermatology; supplement versus food; low risk hypocaloric diet; ketogenic diet in dermatology food quality issues, pesticide residues, transgenic food, processing and preparation effects, individualizing food; future direction. In addition, some basic principles of clinical nutrition will also be discussed.

7309201: Principles of Biochemistry (2 credit hours)

These courses will fully cover the integrated functions of the human body from the cell to the body. It will also study the molecular structure of living cells, the chemical and biological reactions that the body is going through, the reactions and nutrition that live cells need. These courses cover vital energy and metabolism related to: carbohydrates, fats, proteins and enzymes. The focus will also be on all vital skin related processes and health.

7309202: Physiology for cosmetic Students (3 credit hours)

This course provides students with basic information on the science of the physiology of the & quot; intestinal, renal, pulmonary, cardiovascular and reproductive systems, especially the systems that affect the skin, hair and nails appearance and functions. This course will also be concerned with explaining the acidic body balance, water, electrolytes and body reactions. It adapts it to different stress and adapts it to physiological disorders, and it will also focus on the functions and mechanism of the tissue and the different layers of skin and its accessories, such as hair, glands and nails. Students will be introduced the structure of the skin (basic anatomy and physiology), will have an introduction to skin and cellular components of the skin, cell cycle, biology of keratinocytes and keratins, structure of melanocytes and biochemistry of melanization and epidermal glands and lipids layer. Details structure of nails and hairs also molecular docking and SAR of compounds that penetrate these tissues.

7309203: Pharmacology for students of cosmetology (3 credit hours)

A compulsory course with two lectures and two practical hours per week. This course will provide students with detailed information about medicine in cosmetic sciences, for example, retinoids and vitamins such as vitamin E, vitamin C, vitamin B. Physiological lipids to repair barriers in dermatological diseases. Cosmetic plants. Cosmetic Minerals, Moisturizers Function, Formulation, and Clinical Applications; Skin lightening agents; Peptides and Proteins Scrub. Nutritional antioxidants. Internal growth factors such as cosmetics; Cosmetic sunscreens and contact dermatitis. In addition to multiple topics such as antibiotics, anti-fungal medications,

anti-acne medications, steroid compounds, hair loss medications, and skin ulcers medication.

7309204: Pathology for Cosmetic studies (2 credit hours)

Students learn to apply the principles and mechanisms of diseases. The courses cover basic disease patterns involving etiology, pathogenesis and morphologic changes. The courses cover also many diseases needed cosmetic intervention. At the end of this courses the student should underly different clinical situations and to properly describe the disease process, differential diagnoses, and diagnostic steps, including laboratory correlation.

7309205: Pharmaceutical Formulation I (2 credit hours)

This course aims to introduce students to the basics required to know in manufacturing pharmaceutical forms in general in terms of methods of giving treatment and the properties of the active substance that affect the design of the treatment. In particular, some pharmaceutical forms will be studied in depth, which are pharmaceutical and cosmetic solutions, suspensions and emulsifiers with regard to the methods of preparing them "productivity", stability, productivity and effectiveness over the life of the preparation. It also covers other pharmaceutical forms such as gelatinous skin preparations, pastes, creams, lotions, and soothing in addition to how the drug is absorbed through the skin.

7309206: Phyto and natural ingredients in cosmetics products (2 credit hours)

This course will help students understand topical drug delivery through natural cosmeceuticals, based on natural cosmetic ingredients, and the challenges of using it in a skin care regimen. It will help in learning how to care for the skin from a holistic perspective, and choose the right ingredient, such as the safe use of volatile aromatic oils extracted from certain medicinal plants in soaps, scrubs, fragrances, or even in any spa treatment.

7309207: Phyto and natural ingredients in cosmetics products Lab (1 credit hour)

In this course, students will learn the practical and applied aspects of skin care, especially with regard to natural formulations such as volatile essential oils extracted from certain medicinal plants in soaps, scrubs, or perfumes, or even in treatments used in the spa and how to prepare them.

7309208: Dyes in Cosmetics (2 credit hours)

This course aims to give the student a comprehensive overview of a wide range of dyes that are used in cosmetics. This course includes topics related to organic and inorganic color additives and pigments, their effects, regulation, properties, color selection, and method of use. These include color additives used in hair dye, lipstick, lip gloss, nail polish, eye shadow, eyeliner, mascara, foundation, blush, and more.

7309301: Dermal therapeutics (3 credit hours)

This course is designed to manage common skin, hair and nail conditions. Students will be taught about the disease symptoms and clinical manifestation, relevant investigation and details about the managements for acne and different types of skin infection, rosacea, eczema, psoriasis, pigmentation through drug rashes, and hair loss.

7309302: Pharmaceutical Formulation II (2 credit hours)

This course is an important supplement to the Pharmaceutical Formulation I, as it covers the remainder of the topics in this course to introduce students to the theoretical basis for the manufacture of powder, granules, pills and capsules. Students also study general concepts related to the preparation and formation of these shapes. This course also aims to introduce students to the important principles of designing and synthesizing sterile pharmaceutical forms, ways to give them, the bioavailability of drugs and various solvents and pharmaceutical formulations for the eye. The course also includes nebulizers and studying the size of particles and their packaging.

7309303: Skin care products I (3 credit hours)

This course will provide useful information about ingredients selection and formulation. It will cover ingredients that could offer the required protection such as protective and barrier creams, induce repair and healing creams, surface peeling and scrubbing products. In addition, the course will discuss how these products formulations can be optimized. Moreover, it will cover facial cleansers, tonic, moisturizers and their selection according to different types of skin. Day creams, Night creams, hand and body creams, gels, tonics and lotions will also be discussed.

7309304: Principles of Good Manufacturing Practices in the Pharmaceutical and Cosmetic Industries (2 credit hours)

This course will provide an in-depth overview of current good manufacturing practices for the personal care and beauty products industry. The course is designed to help drafters; production personnel, quality control and assurance teams, and management understand GMP regulations. By reviewing each section of the Quality Systems Handbook, students will gain insights into the processes that affect the writing, issuance, and maintenance of SOPs and how they affect day-to-day operations, including GMP requirements for facilities, employee training and equipment qualification activities, process validation, component and product specifications, Packaging and labeling controls, laboratory activities, storage and shipping control, importance of checking and caring for the water treatment system, complaints and recalls.

7309305: Raw Materials for Cosmetics I (2 credit hours)

The course aims to provide students with basic knowledge of the main raw materials of interest to cosmetics, their functions, and techniques for formulating the most important categories of cosmetics. Various topics will be covered with an emphasis on the functional cosmetic raw materials approach related to the formulation of cosmetic products and the appropriate uses of cosmetic products. The chemical properties of functional ingredients, aesthetic components, claims ingredients, cleaners, conditioners, colorants, and reactive ingredients will be discussed in this course. Aesthetic raw material ingredients should be discussed in this course such as solvents, formulation aids, preservatives, thickeners, fragrances, fillers, appearance modifiers, and texture modifiers. The course should describe how to formulate and manufacture cosmetic raw materials, and how to choose the best cosmetic formulation of its type. Make-up cosmetics, skin care cosmetics, hair care cosmetics.

7309306: Hair, Nail & skin diseases and disturbances (3 credit hours)

This course will introduce the student to the basic principles of hair, nail & skin anatomy and physiology. In addition, it will focus on signs and symptoms of hair, nail & skin disease, nail signs, nail signs of systemic diseases and drug-induced nail changes. Moreover, it will discuss the various types of hair& nail disorders due to dermatological diseases, hair, nail & skin disorders due to environmental and cosmetic causes and auto-induced disease, common diseases of the toenails; occupational dermatology disease; genodermatosis; skin & scalp infection and infective nail disorders; skin& nails tumors and cancer. Furthermore, medical and cosmetic treatments for hair, nail& skin disturbances will be discussed.

7309307: Signs of aging and ways to prevent it (2 credit hours)

In this course, students will learn about all the physiological, pathological, behavioral and nutritional aspects that cause early progression in skin aging. How students will get acquainted with the scientific and practical skills used to prevent and prevent them.

7309308: Hair and nail care products (3 credit hours)

This course provides a review of the chemical structure and morphology of human hair, followed by an analysis of its fundamental properties to relate it with cosmetic treatments. After that, the basic science of shampoos, conditioners, styling products, hair colorants, waving and relaxing products, shaving and depilatories, hair loss treatments etc., will be thoroughly covered. In addition, for each product category a thorough review of the foremost raw materials presently used in the industry will be discussed. In this manner, you will quickly become familiar with the science of hair, products, properties, raw materials, and challenges related to the hair care cosmetic industry. Finally, at the end of the course a critical analysis of the methodology used for hair claim substantiation will also be addressed. All students should participate in an interactive session dedicated to the design of typical hair care products from the knowledge gained within the course. Cuticle remover, cuticle softener, nail bleach, nail varnish and varnish removers will also be covered

7309309: Practical Hair and nail care products (1 credit hours)

This course will provide students with the basic knowledge and skills to formulate and compound the various types of hair and nail products such as shampoos, conditioners, styling products, hair colorants, waving and relaxing products, shaving, depilatories and hair loss treatments. The following nail products: cuticle remover, cuticle softener, nail bleach, nail varnish and varnish removers will also be covered.

7309310: Skin Care and Methods for Cleansing (3 credit hours)

This course reviews the basic principles of skin care and cleaning. It will focus on cosmetics and the basic principles required for its preparation. These medicinal and cosmetic products include skin hydration and moisturizers. Skin disinfection; Liquid creams and emulsions for cleansing the face; Facial cleansing; peeling; Skin aging and its management; Sunscreens, skin, protection from sunlight and mechanisms of action; Inflammation, dermatitis and cosmetics. Chemical peeling, dermabrasion, abrasion. Retinoic acid, hydroxy and polyhydroxy acids, whitening and bleaching preparations, astringents; Preparations used in dermatology; Mesotherapy; And the

approach to applying cosmetics to the face, neck and body. Define the permissible proportions of peeled drugs.

7309311: Skin Care and Cleansing Lab (1 credit hour)

This practical course aims to train the student clinically, where the student will acquire the practical knowledge necessary to distinguish between different skin types. In addition, the student will be able to advise the patient about the most appropriate treatment based on his skin evaluation (oily skin, combination skin, inflamed skin, skin with systemic diseases). In addition, the clinical relationship between facial treatment and chronic skin diseases will be covered.

7309312: Marketing of Cosmetics (2 credit hours)

In this course, students learn how to participate in blogging, social media, website development and entrepreneurship in order to develop a cosmetic brand. The student will also be encouraged to participate in discussions about the professional, educational, political and cultural implications of beauty and cosmetics in modern societies, locally and internationally. In addition, the student will explore and use various research tools to investigate brands and promote beauty and cosmetic services through marketing, advertising, event management, publicity or public relations.

7309313: Skin Care Products 1 Lab (1 credit hour)

This lab will provide students with the knowledge and skills needed to formulate various cosmetic skin products such as protective creams, skin peeling products and face cleansers, cleansing creams, moisturizers, day creams, night creams, hand and body creams.

7309314: Cosmetics Research Project (3 credit hours)

The student registers this course in the summer semester of the third year, and the research is conducted under the supervision of a faculty member from the college. Work on the project will continue until the second semester of the fourth year. In the end, the student must present his work to a committee to evaluate the project assigned to him.

7309401: Management of Cosmetic pipelines and clinics (1 credit hours)

This course will introduce the students to the basics of medical management; management of medical staff; Medical Policies and management; Medical economics, financial study and development, management of drugs and medication consumption and expenses; information technology in medical management;

dermatocosmically continues medical education. Moreover, the student will be introduced to the management of production pipelines in a pharmaceutical and cosmetic industry.

7309402: Oral care products (2 credit hours)

This course will provide all required knowledge about dental anatomy, dental caries and maintaining oral hygiene. Oral care products such as toothpaste of all kinds, mouthwashes, teeth whitening ingredients and formulations will also be covered, in addition to advanced devices that serve to whiten teeth or related matters.

7309403: Perfumes and essential oils products, (2 credit hours)

This course introduces all the details related to the nose and the sensitivity of the odor detection for this nose will be covered. The origin of perfumes, classification of smells, their families, types and components will be identified. Also essential oils, scents, and how to design perfumes are discussed.

7309404: Practical Perfumes and essential oils products, (1 credit hour)

This practical course will provide students with the basic practical knowledge and skills to extract essential oils of all kinds. Students will also learn how to prepare different aromatic products such as toilet water, cologne water, splash cologne and after shaving perfumes. Inhalation products for essential oils and air fresheners will also be included.

7309405: Dermal toxicology (2 credit hours)

The overall objective is to provide an introductory overview of the field of toxicology covering the basic principles, target organ toxicity, the toxicity of a limited group of compounds targeting the skin, and treatment. The principal learning objective is for the students to gain familiarity with basic building blocks of toxicology, to enable them to subsequently, build a more detailed knowledge of those particular aspects of toxicology that are relevant to dermal toxicity. Allergic and immunological toxic reactions will also be covered.

7309406: Artificial intelligence in dermatology and aesthetics (2 credit hours)

This course describes the use of technology and artificial intelligence for cosmetic purposes and neutralizing skin disorders. In fact, laser skin removal, the application of ultrasound in cosmetic dermatology, and radio frequency devices and equipment

for hair removal and hair transplantation will be discussed. In addition, tattoo removal, pigmentation, sagging and liposuction techniques will be covered. The latest trends and applications in artificial intelligence in plastic science will also be discussed.

7309407: Modern technology in cosmetic dermatology treatments (2 credit hours)

This course covers the reasons for the different use of materials and leather products that are used in cosmetic clinics and centers for cosmetic purposes, and the possible complications and negative reactions that may result from the body, such as botulinum toxin, botulinum toxin type A, botulinum toxin type B and injectable fillings for use, complications and adverse reactions, as will cover other techniques such as mesotherapy and fecal treatment, and technology to enlarge soft tissue. In addition, biological therapies and stem cell technology will be discussed.

7000408: Research Methods in Biomedical Sciences (3 credit hours)

Scientific research is the primary source for accessing knowledge. Knowledge of the latest developments in studies published in peer-reviewed journals is an axiom of scientific practice in the fields of pharmacy today. This course will enable students to be able to choose the appropriate design for pharmaceutical scientific research and the mechanisms for conducting it. The pharmaceutical scientific research course is interested in explaining the basics of the scientific methodology, principles of scientific research and advanced biostatistics applications so that pharmacy students can form a better understanding of how to do and understand this research. The course presenters will use live examples of studies published in peer-reviewed journals to learn how the results of the study are compared and how to interpret them. They will also touch on the scientific research vocabulary used in studies and their implications. A full explanation will be given of the main steps the study goes through, from the research question and the research problem to publishing in the journal. Students in this course will also be trained in some computer programs required to conduct research, such as statistics programs and others.

7309409: Nanocosmetics (3 credit hours)

The main objective of nanocosmetics is to introduce the students to the definition of nanotechnology and its application in the field of cosmetics. The course will also cover the production of different types of nanomaterials used in cosmetics products such as polymeric nanoparticles, nanoemulsions, liposomes, lipid nanoparticles, metallic nanoparticles, and others. Moreover, it deals with the development of innovative methodologies used in the preparation of nanocosmetics products, quality testing, and finally manages consumer health risks of nanocosmetics.

7309410: Phototherapy and laser for dermatological diseases (3 credit hours)

Physics of light and laser, wavelength; history of phototherapy; sun light effect; Ablative Laser Skin Resurfacing, Nonablative Laser Skin Resurfacing, Carbon Dioxide Laser, Erbium Q switch N.D yag laser ,eximer laser, ultra violate A, narrow band UV A, Intense Pulsed Light Source, Pulsed Dye Laser ,Midinfrared Lasers; Nonablative Radiofrequency Technology; selective thermolysis; Adverse Effects and Complications.

7309411: Cosmetic registration systems and laws (1 credit hour)

This course is concerned with presenting the necessary legislative frameworks for the manufacture and registration of cosmetics locally and internationally. A brief overview of international regulations will be provided to help students develop global perspectives. Actual case studies will be presented during the students' approach to the registration and marketing of beauty products.

7309412: Communication skills and counseling in cosmetology (1 credit hour)

In this course the student will acquire knowledge in physical examination; principles in psychology, dermatology psychological inflect, factitious dermatology, malingering; pre procedure consultation, patient medical background; patient selection and managing patient under and over expectation; pretreatment considerations, postinjection considerations; communication skills.

7309413: Training in skin care centers (1 credit hour)

In this training the student would put hands on facial treatments with the use of professional advanced skincare products to treat various skin conditions, Skin Rejuvenation, body contouring, slimming, hair removal & anti-ageing with exposure to latest technology in Beauty.

7309414: Definition of dermatological conditions (2 credit hours)

Through these theoretical and practical lectures, students will be introduced by a specialized dermatologist to different skin diseases, how to diagnose them and the different methods of their treatment, whether pharmacological or alternative therapeutic such as acne, sensitivity & other skin disorders. In addition, the student will be trained to use Chemical Peels DermaRollers / Microneedling, Fibroblast Plasmagen. Treatment of sagging eyelids, fine lines around the eyes & mouth, broken capillaries and removal of skin tags, it is also possible to create a collaborative and constructive dialogue between the medical and aesthetic specialty in order to serve the profession and society.

7309415: Field training in cosmetic factories, pharmacies, and / or cosmetic warehouses (2 credit hours)

The student trains in cosmetic factories, pharmacies and / or cosmetic warehouses where practicing pharmacists, in addition to a supervisor from the university staff, will supervise the training of students. Students learn during training how to deal with pharmaceutical products that do not need a prescription in addition to cosmetic products. Also, they will learn about the financial and administrative aspects. Students will also learn the names of commercial medicines, agents and importers of medicines, and of cosmetic preparations that are dispensed.

7309416: Anti-aging procedure and protocol (2 credit hours)

The course covers an introductory to aging, its mechanism of action at the cellular and molecular levels, and the role of different infections in aging. The course also addresses the skin care system; Light protection and antioxidants; Topical medications with anti-aging properties; Exercise for longevity; Interventional procedures such as visible light and laser, radio-frequency skin rejuvenation, resurfacing and stretching; Hormonal treatments. Telomere-based therapies stem cells, brain exercises, tissue healing and aging.

7227101- First Aid (1 credit hour)

A practical compulsory course based on a weekly lecture. This course aims to push students to deal with patients and the hospital environment in various departments and facilities. In addition, students receive a brief overview of first aid principles.

7309417: Eye cosmetics (2 credit hours)

This course aims to provide students with the necessary skills to understand the composition of cosmetic products used for the eyes, including mascara and eyeliner, as well as the components of these products, the mechanism of action of these products used locally and the possibility of affecting the eyes.