UNIVERSIDADE FEDERAL DO ESTADO DO RIO DE JANEIRO
CENTER FOR BIOLOGICAL AND HEALTH SCIENCES
Biomedical Institute

BIOMEDICINE COURSE DESCRIPTIONS

TABLE OF CURRICULAR COMPONENTS v2007 (MANDATORY COURSES, OPTIONAL COURSES, SUPERVISED CURRICULAR INTERNSHIP, COMPLEMENTARY ACTIVITIES AND FINAL PAPER

COD SIE	COURSE_NAME	TERM	TOTAL_CL	CREDITS	CREDITS	COURSE DESCRIPTION	PREREQUISITE	Type*
ECB0005	SUPERVISED INTERNSHIP I	7	270	9	0/270 0T/9P	Develop professional knowledge and practice, enabling the student to work in an integrated manner, in which he/she acts cooperatively, achieving previously established goals.	nonexistent	1
ECB0006	SUPERVISED INTERNSHIP II	8	570	19	0/570 0T/19P	Deepen professional knowledge and practice, enabling the student to work in an integrated manner, in which he/she acts cooperatively, achieving previously established goals.	SUPERVISED INTERNSHIP I	1
ECB0007	FINAL PAPER I	7	60	2	00/60 0T/2P	Stimulation of scientific production, improvement of the interpretation capacity and elaboration of a course conclusion work in a specific area.	course area	1
ECB0008	FINAL PAPER II	8	60	2	00/60 0T/2P	Research development. The structure of the monograph. Writing of the monograph. Graphic presentation of the monograph.	FINAL PAPER I	1
HDI0142	BRAZILIAN SIGN LANGUAGE	2	60	4	60/0 4T/0P	Brazilian Sign Language and its linguistic singularities. LIBRAS experience from direct contact with a deaf teacher. Implications of Decree No. 5,526 for school practice and teacher training.	nonexistent	2
HDI0164	AFRO-BRAZILIAN CULTURES IN CLASSROOM	2	30	2	30/0 2T/0P	Ethnic-Racial Diversity in the Elementary School. Black Diaspora. African civilizations. Africans in Brazil: origin and contributions. Black movement. Quilombos: history, organization and culture. Law 10,639/2003: text and context. Africanity and Religiosity. Contemporary Afro-Brazilian cultures. Dimensions of Afro-Brazilian Culture Teaching.	nonexistent	2
HTD0051	ORAL AND WRITTEN EXPRESSION	2	60	3	30/30 2T/1P	General notions of discursive genre. Communication scheme; Oral and written language. Grammatical Standards. Oral expression.	nonexistent	2
SBC0003	PLANT BIOLOGY	2	75	4	45/30 3T/1P	Study of vegetables in their broad form. It comprises morphological, functional aspects (plant physiology), taxonomy, classification, systematics, ecology, and evolution.	nonexistent	2
SBC0013	SCIENTIFIC WRITING SKILLS	3	30	2	30/0 2T/0P	The course aims to present the structure of a research project and report, monograph structure, dissertation and thesis, with a focus on editorial and graphic uniformity.	nonexistent	2
SBC0030	FUNDAMENTALS OF BOTANY	1	60	3	30/30 2T/1P	Study of the morphology, physiology and evolution of plant divisions, their taxonomy and phylogenetic relationships, with emphasis on groups of medical importance.	nonexistent	1
SBC0031	CURRENT TOPICS IN BIOLOGY	6	30	2	30/00 2T/0P	Discussion of theories, hypotheses and classic concepts of Biology.	BASIC ECOLOGY EVOLUTION	2
SBC0063	ADVANCED PLANT BIOTECHNOLOGY	2	45	2	15/30 1T/1P	Plant Biotechnology: definition, object, methods, importance of its study for the economic viability of the production of species and their special metabolites. Study of basic and advanced techniques and commercial applicability of these techniques.	nonexistent	2
SBQ0001	ADVANCED TOPICS IN BIOSCIENCES	2	30	2	30/0 2T/0P	Weekly seminars with the results of researches developed by UNIRIO's research professors and graduate students and guests from other strictu sensu programs.	nonexistent	2
SBQ0025	BIOCHEMISTRY OF VITAMINS	5	30	2	30/0 2T/0P	Classify fat-soluble and water-soluble vitamins and understand their main differences. Know the distribution in food. To know the structure, absorption mechanisms, activation of pro-vitamins, and transport of each group of vitamins. To understand the different metabolic functions, including in particular cases when the vitamin is used as a drug and has hormonal activity. To understand the signs and symptoms and the biochemical tests to assess the state of hypo- and hypervitaminosis.	BIOCHEMISTRY II	2
SBQ0026	BIOCHEMISTRY OF DIABETES	5	60	3	30/30 2T/1P	Study of the basic anatomical characteristics of the pancreas. Description of the evolution of knowledge about diabetes biochemistry. Basic processes related to the synthesis, secretion, and chemical structure of insulin. Molecular mechanisms involving insulin-mediated glucose uptake and transport in muscle, liver and adipose tissues. General and specific aspects related to cell signaling commanded by insulin and its metabolic functions. Classification of different types of diabetes mellitus. Main aspects involved in insulin resistance. Main signs and symptoms of diabetes and its acute and chronic complications. Main laboratory methods to identify alteration and glucose tolerance, insulin resistance, and diabetes. The pharmacological action and the influence of physical activity and diet in the treatment of different types of diabertes. Surgical interventions used to control diabetes.	BIOCHEMISTRY II	2
SBQ0027	SEMINARS IN BIOCHEMISTRY	5	30	2	30/0 2T/0P	Learn how to prepare a seminar. Discuss scientific articles. Present articles in the form of seminars.	BIOCHEMISTRY II	2
SCA0018	ENVIRONMENTAL MICROBIOLOGY	2	45	2	15/30 1T/1P	The history of life. Microbial Diversity. Biogeochemical cycles. Microbial ecology in environmental compartments: soil, water, and atmosphere. Microorganisms as environmental indicators. Biotechnological potential of microorganisms. Biological weapons. Federal regulation for access to genetic heritage. Qualitative and quantitative techniques in environmental microbiology.	nonexistent	2
SCF0001	BIOCHEMISTRY I	3	90	5	60/30 4T/1P	Biochemical study of the cell. Macromolecule chemistry and metabolism: carbohydrates, lipids, amino acids, proteins and nucleic acids. Integration and control of metabolism.	nonexistent	1
SCF0004	PHYSIOLOGY II (Human)	6	45	3	45/0 3T/0P	Transmission of messages in the nervous system. Elements of neural networks. Somesthetic physiology. Physiology of motor skills. Cerebral cortical neurobiology. Cerebral cortical electrophysiology. Physiology of conscious processes. Physiology of emotional processes. Mnetic physiology. Physiology of conditioning and learning. Bases of Neuropsychology.	PHYSIOLOGY I (GENERAL)	1
SCF0006	RADIOBIOLOGY	6	60	3	30/30 2T/1P	Structure of matter; Radioactivity; Radioisotope sources and production; Interaction of ionizing radiation with matter; Radioactivity measures; Medical, biological and technology applications of radioisotopes and electromagnetic radiation: X-rays and Gamma; Radioprotection; Fundamental and molecular radiobiology; Photobiology; General biological effects: detections and measures.	MOLECULAR BIOLOGY I BIOPHYSICS	1
SCF0007	PHYSIOLOGY I (GENERAL)	5	60	3	30/30 2T/1P	Introduction to physiology. Cellular and systemic homeostasis. Bioelectrogenesis. Muscle physiology. Physiology of the autonomic nervous system. Cardiovascular physiology. Respiratory physiology. Renal physiology Digestive physiology. Endocrine physiology. Reproductive physiology.	HISTOLOGY II (MICROSCOPIC ANATOMY) BIOCHEMISTRY I BIOPHYSICS ANATOMY	1

*TIPO 1. Obrigatoria, 2.Optativa, 3. Eletiva

SCF0009	PHARMACOLOGY I	6	60	3	30/30 2T/1P	Discuss the general objectives of Pharmacology I, conceptualize and classify drugs as to their origin and uses. Discuss the body's actions on the organism (pharmacokinetics) namely: absorption, administration routes, pharmacological research methodology, distribution, mechanism of action, interactions, elimination and adverse reactions.	PHYSIOLOGY I (GENERAL)	1
SCF0010	PHARMACOLOGY I	7	120	6	60/60 4T/2P	Pharmacology of the central nervous system; Cardiovascular and blood pharmacology; Pharmacology of the respiratory system; Endocrinological pharmacology.	PHARMACOLOGY I	1
SCF0011	BIOCHEMISTRY II	4	90	5	60/30 4T/1P	Biochemical study of digestion. Blood biochemistry. Biochemistry of the liver. Breathing and acid-base balance. Mineral salts and water. Biochemistry of the kidney. Biochemistry of bone and connective tissue. Muscle biochemistry. Hormones.	BIOCHEMISTRY I	1
SCF0013	BIOPHYSICS	4	120	6	60/60 4T/2P	The importance of Biophysics and fields of interest. Water and its biological importance. Scattered systems. Solutions. pH and buffers. Acid-base balance. Biomechanics. Biophysics of circulation. Bioelectricity. Biophysics of muscle contraction. Biothermology. Bioenergetics. Analysis methods in Biophysics. Ultrasound.	nonexistent	1
SCF0021	TOXICOLOGY	5	60	3	30/30 2T/1P	Toxicology history; Toxic agent; Toxicity and intoxication. Characteristics of exposure to xenobiotics. Toxicokinetics. Toxicodynamics. Drug toxicology. Environmental toxicology. Occupational toxicology. Social toxicology.	BIOCHEMISTRY II	1
SCF0024	BIOMEDICAL PHYSICS AND IMAGING	2	60	3	30/30 2T/1P	Structure of matter. Characterization of ionizing radiation sources . Production of radionuclides, X radiation, radiofrequency and ultrasound for diagnostic and therapeutic purposes. Biological effects of ionizing radiation. Notions of radiological protection. Principles of the operation of equipment for obtaining radiographic, scintigraphic, ultrasound, and nuclear magnetic resonance images.	nonexistent	2
SCM0001	CYTOLOGY	1	30	2	30/0 2T/0P	Historical evolution of knowledge. The cell, general aspects and properties. Cell organelles; nucleus; cell division and cell differentiations.	nonexistent	1
SCM0002	HISTOLOGY I	2	60	3	30/30 2T/1P	General tissue classification; Epithelial lining tissue; Glandular epithelial tissue; Connective tissue; Bone tissue; Blood; Muscle tissue and nervous tissue.	CYTOLOGY	1
SCM0003	HISTOLOGY II (MICROSCOPIC ANATOMY)	3	60	3	30/30 2T/1P	Lymphoid formation and organ; Circulatory system; Respiratory system; Urinary tract; Endocrine glands; Skin and attachments; Mammary gland; Digestive system; Male genital tract; Female genital tract; Sense organs.	HISTOLOGY I	1
SCM0005	EMBRYOLOGY	1	30	2	30/00 2T/0P	Male genital tract; Female genital tract; Ovulation; Egg segmentation; Yolk and amniotic and sacs; Primary mesoderm; The tridermic germ; Curvature and closure of the embryo body; Embryonic annexes; Deciduas and Placentas; Branchial arches and gill slits; Pharyngeal bags. The face bones; Formation of the oral cavity; Genesis of the digestive tract; of the glands attached to the digestive tract; Odontogenesis, Genesis of the respiratory system; Lymphoid organs, Heart, Blood vessels, Endocrine glands, Urinary tract.	nonexistent	1
SCM0006	GENERAL GENETICS	4	90	5	60/30 4T/1P	Cell divisions (mitosis and meiosis). Mechanisms of inheritance of hereditary characters and their association with meiosis. Probability applied to Genetics. Chromosome mapping. Introduction to Quantitative Genetics. Karyotype and its applications. Ploidy levels and structural and numerical chromosomal changes. DNA structure and duplication. Biosynthesis of RNA and proteins. Introduction to Population Genetics. Introduction to the Theory of Evolution and evolutionary agents.	BIOCHEMISTRY I BIOSTATISTICS	1
SCM0009	HUMAN GENETICS	7	60	3	30/30 2T/1P	The course deals with the causes of the main syndromes and other diseases of genetic etiology, also addressing the ethical aspects related to genetic counseling and the prenatal diagnosis of hereditary and/or congenital anomalies.	GENERAL GENETICS	2
SCM0011	ANATOMY	3	90	4	30/60 2T/2P	The course aims to inform the morphological aspects of the human body, conceptualizing the systems and tracts and emphasizing the anatomical nomenclature of the organs and systems.	nonexistent	1
SCM0012	HUMAN ANATOMY I	4	120	5	30/90 2T/3P	Necessary knowledge of Anatomy, aiming to associate them at the macroscopic level with the knowledge acquired in histology, relating to the four fundamental tissues and some organs and systems, seeking to relate to the maximum with the courses of the professional program.	ANATOMY	2
SCM0013	HUMAN ANATOMY II	5	120	5	30/90 2T/3P	The course aims to inform the morphological aspects of the human body, conceptualizing the systems and tracts and emphasizing the anatomical nomenclature of the organs and systems.	HUMAN ANATOMY I	2
SCM0021	ADVANCED BIOINFORMATICS	7	45	3	45/00 3T/0P	Introduction to Programming Logic, PERL and Python Applications, Introduction to the Linux Operating System, Database, Local and global sequence alignment, Molecular phylogeny, Forensic bioinformatics, *in silico* analysis of biological systems, Non-RNAs coding, Prediction of secondary structures, *ab initio* and by homology modeling, Structural alignment.	BIOINFORMATICS	2
SCM0029	MOLECULAR BIOLOGY I	5	90	5	60/30 4T/1P	Cell organization. Chromosomes, genes and gene expression control. The cell cycle and its control mechanisms. Recombinant DNA technology, its applications and ethical implications. DNA analysis techniques and their applications	GENERAL GENETICS BIOCHEMISTRY I	1
SCM0030	MOLECULAR BIOLOGY II	6	60	3	30/30 2T/1P	The internal organization of the cell and the signal transduction pathways. The cell cycle and its control mechanisms. Gene expression. Cellular mechanisms of development, cell differentiation, and maintenance of tissues. Genomics and proteomics.	MOLECULAR BIOLOGY I	2
SCM0031	BIOINFORMATICS	6	45	2	15/30 1T/1P	Introduction to Computational Molecular Biology. Analysis of databases. Simple sequence alignment. Multiple sequence alignment. Phylogeny. Functional genome. Data Mining. Structural analysis of proteins and proteomes. Modeling of biomolecules and pharmacogenomics.	MOLECULAR BIOLOGY I	2
SCN0003	GENERAL AND INORGANIC CHEMISTRY	1	75	4	45/30 3T/1P	Atomic theories. Periodic classification of elements. Stoichiometry Chemical bonds. Acid-base theories. Colligative solutions and properties. Chemical kinetics.	nonexistent	1
SCN0004	ORGANIC CHEMISTRY	2	75	4	45/30 3T/1P	Introduction; Hydrocarbons; Stereochemistry; Reaction mechanisms and chemical intermediates; Alcohols and Amines; Phenols, Ethers, Aldehydes and Ketones; Carboxylic acids and Esters; Amides; Special topics: Lipids, Phospholipids and Waxes; Carbohydrates; Amino Acids, Peptides and Proteins; Terpenes and Steroids; Alkaloids and Acetogenins.	GENERAL AND INORGANIC CHEMISTRY	1
SCN0007	ANALYTICAL CHEMISTRY II	3	90	4	30/60 2T/2P	Chemical balance. Volumetric analysis methods and techniques. Theory of neutralization reactions in aqueous solution. Theory of oxy-reduction reactions.	GENERAL AND INORGANIC CHEMISTRY	1
SCN0024	APPLIED CHEMISTRY	5	60	2	0/60 0T/2P	Purity criteria. Methods for separation and purification of chemical compounds. Characterization reactions of organic compounds. Synthesis reactions.	Organic Chemistry and Biochemistry I	2
SCN0036	ASTROBIOLOGY	4	60	4	60/0 4T/0P	Notions of Fundamental Astronomy, Astrophysics Notions, Notions of Cosmology, Life, Planetary Habitability, Stellar, Galactic and Cosmological Habitability, Astronomical Steps Necessary for Life on Earth, Searching for Life Outside Earth	GENERAL PHYSICS	2
SCN0047	PALEOBIOLOGY	2	90	5	60/30 4T/1P	The origin and development of life (chemical evolution and the origin and development of primitive life); The diversification of life the evolutionary concepts (Lamarchism, Darvinism, and synthetic Theory); Evolutionary aspects and the fossil record; Formation of life in the primitive seas; The fossil evidence of the transition from life to the continent; The evolution and adaptation of plants to terra firma; The diversification of vertebrates; Influences of tectonics on the biosphere; waves of mass extinctions,	nonexistent	2
SCN0128	GENERAL PHYSICS	3	60	4	60/00 4T/0P	Newton's laws. Work and Energy. Conservation of energy. Thermodynamic concepts. Hydrostatics. Radiation physics. Electrical phenomena in cells. Applications.	nonexistent	1
SCN0129	APPLIED PHYSICS	4	90	5	60/30 4T/1P	Theory of errors. Conventional and non-conventional sources of energy. Fusion and nuclear fission. Radioactivity. Radioactive decay; Hydrodynamics. The Second Law of Thermodynamics.	GENERAL PHYSICS	2

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SEH0012	AGING AND HEALTH	2	30	2	30/0 2T/0P	The course addresses the demographic and political characteristics of the population aging process in Brazil. Characteristic of normal and pathological human aging with a specific focus on cognitive and psychological aspects related to that process. The term "aging" was used to name this course, in accordance with WHO policies, in order to differentiate it from the concept of the elderly. The course focuses on aging as a process that starts early, and preventive attitudes should be adopted even in young people, considering the age pyramids. It also aims to provide students with basic knowledge about the functioning of the brain and the mechanisms underlying the neurocognitive and behavioral repercussions of their dysfunctions. To allow the student to have resources to develop a critical view on the topic and the existing scientific production on it.	nonexistent	2
SER0006	BASIC ECOLOGY	2	90	5	60/30 4T/1P	Population dynamics. Population characteristics and fluctuations. Biocenoses. Groupings. Delimitation and ecotone. Evolution and dynamics. Climax Ecosystem and its dynamics.	ECOLOGY ELEMENTS	1
SER0012	ENVIRONMENTAL EDUCATION AND CITIZENSHIP	2	45	2	15/30 1T/1P	Study of educational issues related to the environment, considering the interrelationship between man and nature, specifically with regard to people's living environment, within an inter and multidisciplinary approach to the following aspects: political, ethical, economic, social, ecological, evolutionary, historical, cultural and health.	ECOLOGY ELEMENTS	1
SER0013	ECOLOGY ELEMENTS	1	60	4	30/30 2T/1P	Introduction to Ecology; ecosystems; energy in ecosystems. Biogeochemical cycle; limiting factors; biomes. Evolutionary ecology. Physiological ecology.	nonexistent	1
SER0014	EVOLUTION	5	60	4	60/00 4T/0P	The origin and impact of evolutionary thinking, the ecological context of evolutionary change, population structure and genetic drift, effects of natural selection, speciation and adaptation, applied methodologies, biogeography, human evolution.	GENERAL GENETICS	1
SMG0025	HEMATOLOGY	6	60	3	30/30 2T/1P	The course aims, within the professional area, to prepare the student, from a theoretical and practical point of view, for the exercise of Clinical Analyzes with regard to the field of Hematology.	HISTOLOGY II (MICROSCOPIC ANATOMY)	2
SMG0124	INTRODUCTION TO CLINICAL RESEARCH	8	30	2	30/0 2T/0P	The syllabus of the optional course Introduction to Clinical Research aims to provide the Medicine and Biomedicine undergraduate student with the essential elements to promote the discussion of clinical research during health education, providing students with an early insertion in a scenario of research, technological development and health innovation activities. Historical aspects, regulatory frameworks of clinical research in the world and in Brazil, as well as ethical and methodological issues of clinical research will be addressed. Focus will be given to research with immunobiologicals, considering the importance of new immunobiological products in the national technological production aiming at their use in the control programs of vaccine-preventable diseases in our country for the strengthening of the Unified Health System with a multidisciplinary approach. As prerequisites for the student to attend the course and obtain greater performance, it is essential that the student already has knowledge of Biostatistics, Epidemiology, Microbiology, Immunology and Semiology.	Biostatistics Immunology Microbiology Epidemiology	2
SMP0024	GENERAL AND EXPERIMENTAL PATHOLOGY	6	120	5	30/90 2T/3P	Knowledge of the basic mechanisms of diseases; Macro and microscopic morphological study of general pathological processes; Notions of Immunopathology, Genetic Pathology, Nutritional Pathology and Environmental Pathology; Knowledge of laboratory techniques and Histopathology.	IMMUNOLOGY HISTOLOGY II (MICROSCOPIC ANATOMY) MOLECULAR BIOLOGY I	1
SMP0025	IMMUNOLOGY	5	90	4	30/60 2T/2P	General and host-specific defense mechanisms in the interrelationships with the parasite. Cells responsible for specific and nonspecific immune responses. Inflammatory Reaction and Phagocytosis. Antigens and immunogens. Structure and function of antibodies. Main histocompatibility complex. Cellular interactions in the immune response. Effector mechanisms of the humoral and cellular immune response. Antigen vs antibody reactions and their use in immunological methods of research and diagnosis. Immunoprophylaxis and immunotherapy. Study of pathological processes resulting from changes in the normal mechanisms of immune response: hypersensitivity reactions, immunodeficiencies, autoimmunity, transplants and tumors.	BIOCHEMISTRY I HISTOLOGY II (MICROSCOPIC ANATOMY)	1
SMP0026	MICROBIOLOGY	6	150	7	60/90 4T/3P	Study of the morphological and physiological characteristics of the bacterial cell; Bacterial genetics and its applications. Control of microorganisms by physical and chemical agents; Antimicrobial agents and mechanisms of bacterial resistance.	IMMUNOLOGY	1
SMP0027	PARASITOLOGY	6	120	6	60/60 4T/2P	Concept of parasitism; Biological associations; Taxonomy notions; Parasitic actions and host reactions; Study of parasitic agents and their interrelationships with hosts, in the Protozoology, Helminthology, Arthropodology, and Noceozoology units.	IMMUNOLOGY ANATOMY	1
SMP0058	CLINICAL PARASITOLOGY	7	60	3	30/30 2T/1P	Laboratory diagnosis of parasitic agents. Protocols, procedures and indications of the most important etiological laboratory methods used in the field of parasitology. Interpretation and validation of results.	Parasitology	2
SSC0001	ENVIRONMENT AND HEALTH	4	60	3	30/30 2T/1P	It studies the health and the health-disease process of populations and individuals, in the light of their environmental aspects, their close connection with the environment at local, regional and general levels, placing them in the political, economic, social, and biological contexts.	nonexistent	1
SSC0006	PHYSICAL EDUCATION I	1	30	1	00/30 0T/1P	Set of exercises, postures and skills developed, aiming at maintaining physical shape through sports, based on psychological well-being. Focus: Volleyball.	nonexistent	3
SSC0007	PHYSICAL EDUCATION II	2	30	1	00/30 0T/1P	Set of exercises, postures and skills developed, aiming at maintaining physical shape through sports, based on psychological well-being. Focus: Basketball.	PHYSICAL EDUCATION I	3
SSC0016	EPIDEMIOLOGY	7	60	4	60/00 4T/0P	Study the health-disease process in human communities, analyzing the distribution and determining factors of illnesses, health problems and events associated with collective health, proposing specific measures for the preservation, control, or eradication of diseases and indicators that support planning, administration, and evaluation of health actions.	PARASITOLOGY MICROBIOLOGY BIOSTATISTICS	1
SSC0020	HYGIENE AND PUBLIC HEALTH	7	45	3	45/00 3T/0P	The course analyzes the importance of the social component in the emergence, expansion, and eradication of diseases. Old and new endemic diseases that accompany human evolution taken as case studies.	PARASITOLOGY	1
SSC0030	SCIENTIFIC RESEARCH METHODOLOGY	5	45	3	45/0 3T/0P	The course analyzes the scientific method in its historical-philosophical evolution and discusses from there the production of knowledge today.	nonexistent	1
SSC0046	THEORY OF KNOWLEDGE IN EPIDEMIOLOGY	6	45	3	45/00 3T/0P	The course analyzes the disease as a historical construct determined by the conceptions of time and space. Such conceptions make up the religious, philosophical, and scientific thinking of each era, while their historical remains are consolidated on common sense. It starts from the premise that this whole set structures the disease category and that radical changes in time and space engender radical changes in its constitutive elements - cause, contagion, transmission and control. As a case study, we discuss the contradictory coexistence of Ancient and Modern conceptions, exemplified in the case of syphilis and AIDS.	IMMUNOLOGY	2
SSC0058	INTRODUCTION TO MEDICAL ANTHROPOLOGY	4	30	2	30/0 2T/0P	Introduction to the history, concept, and main schools of Anthropology. Medical Anthropology: definitions and context. The body and its symbolism as an object of professional practice. Disease as a socio-cultural process: relations between disease, culture, and society and social representations. Useful methodologies for the anthropological approach: fieldwork, ethnography and interviews.	nonexistent	2

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SSC0059	BIOSIGNALING	2	60	4	60/0 4T/0P	Identification of the main receptors and molecular mechanism of biosignalization. Biochemical action of endocrine hormones, digestive hormones, adipose tissue hormones, eicosanoids, among others. Preliminary study of the main laboratory tests to identify hormonal pathologies. The relationship between hormones and sports activity.	nonexistent	2
SSC0060	SPORTS AND HEALTH	2	30	2	30/0 2T/0P	The Sport and Health course intends to discuss the chemical and biological bases that govern sports practice and its influence on human health. In this context, it is desired that students analyze and understand the metabolic responses of the organism to high-intensity exercise and prolonged exercise, the metabolic adaptations to training, the influence of exogenous substances on the physical capacity of individuals and their monitoring and the types more suitable for physical activity for specific stages of human life or for pathological situations (eg, old age, diabetes).	nonexistent	2
SSC0061	DIABETES MELLITUS	2	60	4	60/0 4T/0P	Study of Molecular Aspects related to the stimulation of beta cells by incretin hormones. Mechanisms of action of GLP-1 in protecting against apoptosis, stimulating cell proliferation, and neogenesis of beta cells. Investigation of the mechanisms that cause beta cell failure. Study of the blood fatty acid profile in triggering apoptosis of beta cells. Action of thioredoxin in the antioxidant protection of beta cells. Changes in the potassium ion channel and hyperinsulism and neonatal diabetes.	nonexistent	2
SSC0062	SEMINARS ON SCIENCES APPLIED TO HEALTH	2	30	2	30/0 2T/0P	Identification of deacetylases involved in the longevity process. Action of microelements, such as natural phenolic compounds and niacin, in human physiology. Alcohol's action on metabolism. Study of the action of creatine in athletes. Preliminary study of the effects of homocysteine and changes in body mass on the cardiovascular system. Identification of the deleterious effects of xenobiotics, such as dioxins, nitrosamines, polycyclic aromatic hydrocarbons, and ethyl carbamate, on human health.	nonexistent	2
STA0001	BROMATOLOGY	4	120	5	30/90 2T/3P	Introduction to Bromatology. Importance of analytical chemistry in the study of food analysis. Bromatological chemical study of food groups. Bromatological chemical study of food additives. Interaction between food and medication. Active ingredients in food.	ANALYTICAL CHEMISTRY II	2
SZO0001	ANIMAL BIOLOGY	2	75	4	45/30 3T/1P	It is the study of animal diversity at its various levels, including its functional biology, ecology, importance, and use.	nonexistent	2
SZO0005	INTRODUCTION TO COMPARATIVE ANIMAL PHYSIOLOGY	3	75	4	45/30 3T/1P	Comparative study of the manifestations of organic functions in animal phyla. It comprises morphofunctional, design, biochemistry, and biophysics comparative aspects. It comprises both aspects of the functioning of organic systems as a whole and evolutionary and adaptive aspects. It can be defined as the comparison and contrast of mechanisms, processes or responses of different animal species, or of a single species, under different conditions.	ANIMAL BIOLOGY	2
SZO0018	APPLIED ZOOLOGY	1	60	3	30/30 2T/1P	Study of the morphology, physiology, ecology and evolution of animal phyla, their taxonomy and phylogenetic relationships, with emphasis on groups of medical importance.	nonexistent	1
SZO0026	EPISTEMOLOGY AND HISTORY OF SCIENCE	2	60	4	60/0 4T/0P	Encompassing the philosophy of science and the theory of knowledge, Epistemology involves a critical and reflective look at the sciences and presents very fluctuating limits in the field of investigation. Epistemology is located at the intersection of very different concerns and courses, involving scientific practice and philosophical practice linked to Science(s). It involves the historical evolution of what we call Science and scientific reasoning, in the meaning of Science itself, in History and in Societies and its impact and interaction between Society and Science, the general evolution of Methods and Techniques, of the theory of knowledge, of reasoning, and of historical and social aspects related to the scientific area.	nonexistent	2
TIN0001	INTRODUCTION TO COMPUTER SCIENCE	6	60	3	30/30 2T/1P	Notions of computer architecture; operating systems, database, networks, application program lab.	nonexistent	3
TIN0001	DATABASE	7	60	3	30/30 2T/1P	Notions of information systems and their implementation through the use of relational DBMSs.	INTRODUCTION TO COMPUTER SCIENCE	3
TME0001	BIOMATEMATICS	6	60	3	30/30 2T/1P	Integration methods. Definite integral. Definite integral applications. Differential Calculation Applications. Applied differential equations.	MATH SUPPLEMENTS II	2
TME0006	BIOSTATISTICS	3	90	5	60/30 4T/1P	The role of statistics in Biomedicine, exploratory data analysis, notions of probability, Gaussian distribution, reference range for laboratory measurements, notions of sampling, notions of correlation and regression, comparison of two groups.	MATH SUPPLEMENTS I	1
TME0011	STATISTICAL ANALYSIS	7	60	3	30/30 2T/1P	Detailed discussion of the design and analysis of some studies that used statistical methodology. Exploratory data analysis with emphasis on the discussion of variability and statistical distributions. Single factor experiment design. Two-factor experiment design. Multiple Comparisons. Multivariate analysis emphasizing the types of studies that can use these techniques to reduce their size or to form clusters	BIOSTATISTICS	2
TME0016	MATH SUPPLEMENTS I	1	75	4	45/30 3T/1P	Lead the student to master techniques and strategies, from a mathematical point of view, to analyze and solve problems involving phenomena of variation and growth in the field of health	nonexistent	1
TME0017	MATH SUPPLEMENTS II	2	75	4	45/30 3T/1P	It studies problems involving rates of change and movement.	MATH SUPPLEMENTS I	1

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