

This is the general planning and it is given as an orientation. The electives subjects for each particular year could be different.

CORE SUBJECTS PROGRAMME

Subject	Local credits	Credit Type	Period (2)	Description
29084 Biochemistry and molecular Biology	19.5	Core	Y	General biochemistry and molecular biology. General biological physio-chemistry. Molecular basis of cell function and structure. General human cytology, embryology, histology and morphology. Cell and tissue physiology. Human genetics: molecular genetics, cytogenetics and the genetics of populations.
25764 Biophysics	9.00	Core	S	General biological physio-chemistry.
29077 Bio-statistics	10.50	Core	S	Bio-statistics
29115 Introduction to medicine	6.00	Core	S	History of health, disease and the practice of medicine. Theory and method of medicine. Information, documentation and medical terms.
29080 Cellular biology	7.50	Core	S	Cell and tissue physiology. Cellular structure and function.
29107 Medical histology	4.50	Core	S	General human cytology, embryology, histology and morphology.

29069 Human anatomy: general and locomotor apparatus	15.00	Core	S	Study of the development of the locomotor apparatus. General points about the locomotor apparatus. Anatomical names. Study of the bones, joints, muscles, blood vessels and nerves of the locomotor apparatus.
25383 Medical physics	4.50	Core	S	Medical physics. Basis in physics of the functioning of apparatus and systems.
2nd Year				
29100 Medical physiology	30.00	Core	Y	Physiology of the various functional systems of the human organism in a healthy state. Physiology of the: circulation apparatus, blood and hematopoietic organs, respiratory system, excretion system and body liquids, digestive system, metabolism and nutrition, nervous system, endocrine system, reproductive system. Sensory organs, skin and cutaneous attachments and integration and adaptation of the human organism to the environment.
29095 Microscopic structure of human apparatus and systems	9.00	Core	Y	Histological study of the human organism's organs, apparatus and systems.
29104 Human genetics	7.50	Core	S	Human genetics: molecular genetics, cytogenetics and genetics of populations.
29068 Human anatomy: cardiovascular and splanchnology	12.00	Core	S	Study of the heart and the large arterial and venous blood vessels, their branches and distribution. Splanchnology is the section of anatomy that deals with the description of internal functions (digestive system, respiratory apparatus, uro-genital apparatus). It also includes the lymphatic system.
29076 Psychological bases of states of health and disease	7.50	Core	S	Structure and development of the personality. Psychic functions. Doctor-patient relationship. Psychological aspects of medical practice. General psychopathology. Social, employment and group psychopathology. Psychosomatic medicine. Principles of psychotherapy.
29070 Human anatomy: neuroanatomy and sensory organs	9.00	Core	S	Neuro-anatomy is the section of anatomy that studies the nervous system. It also includes the study of the cranial nerves.

3rd Year				
29139 General pathology	18.00	Core	Y	General etiology. Physio-pathology. Clinical semiology and preparation. Important symptoms. Geriatrics. Fundamentals of surgery.
29149 Radiology and medical physics	10.50	Core	Y	General radiology: physics principles, radiobiology. Principles of physics in medicine and rehabilitation. Therapeutics of radiation and general radiological semiology.
29071 Pathological anatomy	13.50	Core	Y	General pathological anatomy. Cellular pathology. Chronic and acute inflammation. Repair. Morphological alterations of hemodynamic disorders. Anatomico-pathological changes in high blood pressure and arteriosclerosis. Morphological alterations in infectious disease. Morphological alterations in genetic disorders and neoplasia.
29097 Pharmacology	10.50	Core	Y	General pharmacology. Pharmacokinetics. Pharmacodynamics and pharmacological groups. Study of the actions and effects of medication. Pharmacokinetic characteristics of the principal drugs.
29132 Microbiology	12.00	Core	Y	Medical microbiology and medical parasitology. Classification and general characteristics. Host-parasite relationships. Microbiological diagnosis. Bases of anti-microbial treatment. Principal bacteria, fungi, viruses and parasites of interest in medicine.
29112 Immunology	4.50	Core	S	Immune system. Functioning of the normal immune system in its main aspects of natural immunity, humoral and cellular response. Principal mechanisms through which the immune system can contribute to disease through states of immunodeficiency, hypersensitivity and autoimmunity. Diagnostic tests used to evaluate the functioning of the immune system. Typical diseases caused by failures of the immune system. Therapies based on the stimulation and suppression of the immune response. Immunological barriers to transplant. Immunological tests applied to the study of other apparatus and systems.
29094 General epidemiology and health demographics	4.50	Core	S	Epidemiology and causality. Epidemiological methods and studies. Diagnosing the health of populations. Social, economic and sanitary indicators of health. Static and dynamic demography.

4 th Year				
29088 Orthopedics surgery and traumatology	12.00	Core	Y	Locomotor apparatus. Etiology, pathological causes, physio-pathology, clinical practice, diagnosis, prognosis, treatment and prevention of diseases. Orthopedic surgery and traumatology.
29086 Surgery	4.10	Core	S	Circulatory apparatus. Respiratory apparatus. Digestive apparatus. Locomotor apparatus. Important surgical syndromes.
29127 Medicine and surgery I	22.50	Core	S	Hematopoietic system. Circulation apparatus. Respiratory apparatus. Cardiac surgery. Angiology and vascular surgery. Thoracic surgery. Clinical oncology. Geriatrics.
29128 Medicine and surgery II	16.50	Core	S	Digestive apparatus. Pancreas. Liver and bile ducts. Etiology, pathological causes, physio-pathology. Clinical practice, diagnosis, prognosis, treatment and prevention of diseases. General and digestive surgery. Rheumatology. Immune system. Clinical oncology. Geriatrics.
29135 Ophthalmology	6.00	Core	S	Etiology, pathological causes, physio-pathology, clinical practice, diagnosis, prognosis, treatment and prevention of diseases. Ophthalmology.
29137 Otorhinolaryngology	7.50	Core	S	Etiology, pathological causes, physio-pathology, clinical practice, diagnosis, prognosis, treatment and prevention of diseases. Otorhinolaryngology
29091 Dermatology	6.00	Core	S	Dermatology. Study of skin diseases. Study of the cutaneous manifestations of other diseases.
5 th Year				
26798 Pediatrics	18.00	Core	Y	Child growth, development and nutrition. Prevention. Clinical practice. Diagnosis, prognosis and treatment of new-born babies and children. Pediatric ecology.
29134 Obstetrics and gynaecology	13.50	Core	Y	Biological processes specific to women. Normal and pathological gestation. Diseases of the female genital apparatus. Prenatal and perinatal pathology. Human reproduction.
29129 Medicine and surgery III	13.50	Core	S	Nervous system. Endocrine system. Metabolism and Nutrition. Endocrinology and nutrition. Etiology, pathological causes, physio-pathology, clinical practice, diagnosis, prognosis, treatment and prevention of breast diseases. Neurosurgery. General surgery. Clinical oncology. Geriatrics.

29098 Clinical pharmacology	10.50	Core	S	Clinical toxicology. Study of the principles of selection of medication. Study and evaluation of benefit/risk/cost relations. Study of the principles of individualised pharmacological treatment. Application of the principles of selection and individualisation of pharmacological treatment for the most common health problems.
29130 Medicine and surgery IV	12.00	Core	S	Infectious pathology. Excretion system. Masculine genital apparatus. Urology. Clinical oncology. Geriatrics.
29148 Psychiatry	9.00T	Core	S	Fundamentals of psychiatric disorders. Clinical manifestations and diagnosis of fundamental psychiatric symptoms. General therapeutic psychiatry. Liaison psychiatry. Social and community psychiatry.
6th Year				
26800 Clinical practice I Clinical practice II Clinical practice III	48	Core	Y	Shifts in accident and emergency. Shifts in a primary care centre. Hospital shifts.
29124 Legal medicine and toxicology. Deontology and medical legislation.	9.00	Core	S	Medical/legal problems in living subjects and corpses. Types and mechanisms of death. General semiology of corpses. Forensic, industrial and environmental toxicology. Ethical and legal aspects of medical practice.
29126 Preventive medicine and public and community health	12.00	Core	S	Epidemiology and prevention of transmissible and chronic diseases. Environmental and occupational health. Health administration: planning. Programming and evaluation of services. Social and health systems. Primary health care. Health education.

ELECTIVE SUBJECTS PROGRAMME

This elective subjects depend on the offer of the educational hospitable unit where the studies develop.

<i>Subject</i>	<i>Local credits</i>	<i>Type of credits</i>	<i>Period (2)</i>	<i>Description</i>
26805 Alcoholism and substance addiction	4.50	Op		Epidemiology and causal factors. Types of dependency and abuse. Psychopathology. Legislation. Prevention. National, autonomous community, local plans of action. Patient care
29067 Pain relief	4.50	Op		Study of the main clinical situations involving pain as the most important semiological elements. Establishment of the diagnostic process and drawing up a therapeutic plan.
29072 Anesthetics, revival and treatment of pain	7.50	Op		Description of anesthetic techniques, intra-operative management and anesthetic management of specific patients. Cardiopulmonary revival, treatment of acute and chronic pain.
29073 Application of molecular biology in medicine	4.50	Op		Description of the biological basis of DNA technology. Applicability of DNA technology to medical practice.

28339 Evaluation and improvement of the quality of care	4.50	Op		Principal contents: Conceptual basis for improving quality. Methodological principles for identifying and evaluating problems. Designing quality indicators. Designing strategies for improvements, and resistance to change. The variability of clinical practice. The main mistakes in care. Conditioning factors for patient satisfaction. Participation by doctors in quality improvement programmes.
29074 Cellular basis of genetic diseases	4.50	Op		Mechanisms and indication, cellular communication and adhesion. Cellular dysfunction and associated human pathologies. Mother cells and their application
26808 Molecular basis of autoimmunity	4.50	Op		Cytological and pathogenic mechanisms of autoimmunity. Clinical expression and immunological laboratory data. Therapeutic resources.
26778 Clinical bioethics	4.50	Op		Clinical aspects and implications – ethics of clinical activities by scientists and medical professionals.
22989 Developmental and teratogenic biology	6.00	Op		Human reproductive and prenatal developmental mechanisms. Study of the principal morphological processes and their chronology.
29082 Biomechanics applied to the locomotor apparatus	4.50	Op		Mechanical response of the constituents of the locomotor apparatus. Static and cinematic study the joints of the upper extremity, lower extremity and trunk. Basic principles of the assisted analysis of movement.
23004 Clinical biochemistry: interpreting laboratory data	6.00	Op		Biochemical basis of diseases and especially the biochemical features that are diagnostic indicators or functional evaluation criteria for organs or systems. Contribution of biochemical tests to diagnosis.
26779 The brain and behaviour	6.00	Op		Neurobiological mechanisms linking behaviour and mental functions. Cognitive neuroscience.
29087 Emergency surgery	4.50	Op		Study of etiology from a practical point of view. Pathological cause diagnosis and treatment of the main situations requiring urgent action in the various surgical specialities.

26811 Plastic and repair surgery	4.50	Op		Development, diagnosis and treatment of pathologies leading to plastic and repair surgery
26810 Clinical cytology	4.50	Op		Study of the basic methodology of cytological diagnosis. Obtaining samples. Microscopic study. Study of cases/problems of exfoliative cytology.
23024 Diagnosis by image	6.00	Op		Study of the diagnostic application of imaging techniques. Cost/benefit evaluation.
26813 Diagnostic and therapeutic endoscopy	4.50	Op		General principles of endoscopy; technique, indications and current importance.
26780 Development and concept of disease	4.50	Op.		Historical analysis of medical systems and health policies. Disease and society in history.
22994 Applied physiology	6.00	Op		Adaptation mechanisms of the various organs and systems of the human organism in particular physiological situations: exercise, temperature change, special environments, acceleration, chronobiology. Methods of evaluation of functional responses.
29101 Physiology and pharmacology	6.00	Op		Adaptation mechanisms of the autonomous nervous system. Autonomous neurotransmission. Main autonomous dysfunction syndromes. Regulation, physio-pathological mechanisms and pharmacological modulation of dysfunctions of the cardiovascular, respiratory, thermoregulation, uro-genital and digestive systems.
26782 Fundamentals and applications of radiation in diagnosis and therapy	4.50	Op		Physics basis of the interaction of electromagnetic radiation and particles with matter. Their applications in diagnosis and therapy. Risk involved.
26816 Phoniatriy	4.50	Op		Study of the voice, its pathologies, diagnosis and treatment.
26817 Medical genetics	4.50	Op		Cytogenetic and molecular analysis of hereditary diseases. Genetic counselling.
29106 Geriatrics	4.50	Op		Epidemiology, theory, biology and psychology of ageing.

22991 Applied medical histology	6.00	Op		Introduction to modern techniques and methods used in the field of histology. Application to the study of normal and pathological histology.
26820 Immunology: physio-pathology and diagnosis	4.50	Op		Application of the physio-pathology of the immune system to clinical practice: problem cases.
26819 Nosocomial infection and antibiotic policy	4.50	Op		Concept of nosocomial infection, organisation for its control, microbiology of the infection. Vigilance and preventive measures. Consumption policy for hospital antibiotics. Methods of direct and indirect evaluation.
26781 Medical information technology	4.50	Op		Evaluation and selection of IT solutions. Knowledge of the general applications related to medical practice.
22997 Introduction to micro information technology for doctors	4.50	Op		Structure and operation of computers. Basic programmes for information storage, handling and display.
29114 Introduction to radiological images	6.00	Op		Systems of radiological exploration: interpretation of images and drawing up reports.
26784 Introduction to scientific methodology I	4.50	Op		Basic assumptions of the biomedical sciences. Characteristics of medical documents. Medical research techniques.
23014 Introduction to scientific methodology II	6.00	Op		Planning a research project. Design and evaluation.
26822 Legislation and health administration	4.50	Op		Legal regulations governing organisational and management health care administrative procedures
29120 Evidence-based medicine	4.50	Op		Problems of managing scientific knowledge. Evidence-based medicine. Formulation of clinical questions and types of design for research to answer them.
29123 Emergency medicine	4.50	Op		Theoretical and practical aspects of emergency medicine, cardiopulmonary revival, situations involving immediate medical care that are common in hospital service and specific patterns for action in primary care medicine.

29121 Family medicine. Primary care practice.	4.50	Op		Basic concepts of family medicine. Organising a primary care centre. Care at the various stages of life. Doctor-patient relationships in primary care. Diagnostic and therapeutic decisions in an environment with low prevalence of disease. Integration.
26823 Physical activity and sports medicine	4.50	Op		Medical/surgical aspects related to the adaptation of the human body to doing exercise.
29125 Palliative medicine	4.50	Op		Study of the evaluation of the needs of patients with diseases in advanced or terminal phases.
29119 Medicine, cinema and literature	4.50	Op		Medical practice and knowledge in literature, cinema and other artistic representations.
26826 Clinical Mycology	4.50	Op		General characteristics of fungal infections. Etiology. Epidemiology and control. Methods of diagnosis. Basis of anti-fungal treatment.
26791 Principles of nutrition and diet	4.50	Op		Description of the biochemical and physiological basis of nutrition and the clinico-therapeutic strategies for drawing up general and specific diets.
23019 General oncology	6.00	Op		Aspects of carcino-genesis, molecular knowledge of DNA alterations at the appearance of cancer. Description of growth factors that can influence tumour proliferation. Importance of this knowledge for prognosis and therapy. Metastatization mechanisms. Principles of treatment with cytostatics. Drug-resistance mechanisms. Cancer clinical practice and treatment.
26829 Child psychiatry	4.50	Op		Psychiatric pathology in the course of the developmental stage (0 to 18 years old). Maturing and psychic development into youth.
26830 Molecular pathology	4.50	Op		Description of the molecular and physio-pathological basis of neoplastic diseases; arteriosclerosis, the viral and toxicoinfectious diseases, among others.
29141 Oral surgical and maxilofacial pathology	6.00	Op		Etiology, pathological causes, physio-pathology, clinical practice, prognosis, treatment and prevention of disease. Maxilofacial surgery.

29146 Reasonable prescription of medication for common health problems	6.00	Op		Principles for the reasonable prescription of medication in the treatment of common health problems. Selection of therapeutic strategies. Individualisation of treatment. Prescription. Patient information.
22998 Human psychology: social basis and abnormal behaviour	6.00	Op		Psychological basis of normal and abnormal behaviour. Basic techniques of behaviour modification. Interpretation of the principal tests of intelligence and personality. Interpersonal skills in clinical practice.
26833 Health at work	4.50	Op		Organisation and forms of working. Physiology of work. Risks at work. Preventive health. Pathology of work.
29151 Basic surgical techniques	4.50	Op		Fundamentals, indications and practice of the basic surgical techniques that the general practitioner must know.
29152 Cell and tissue therapy	4.50	Op		Introduction to the theoretical knowledge of cell and tissue biology which can be clinically used. Knowledge of cell manipulation techniques and possibilities. Knowledge of tissue manipulation techniques. Clinical applications of human cells, manipulated or otherwise. Clinical possibilities of tissue transplant.
22997 Introduction to the medical informatics	4.5	LE		Micro informatics concepts Windows 3.1. Excel 5.0: organization, commands and basic operations. Graphics and printing. Excel as a database. Word 6.0. Power Point 4.0:
25841 Medical Humanism	6.0	LE		Bioethics and Values in Medical studies.