Course title	Biochemistry with elements of chemistry V
Number of credits	10 ECTS
Teaching methods	60 lectures, 30 seminars, 30 labs
Course objectives	In the process of completing this course, students acquire the competencies: • reproduce and understand the intrinsic and extrinsic strategies of regulation and interrelationship of metabolic pathways in health and the relevancy of their dysfunction to the development of pathological conditions in human disease • understand the basis of inherited metabolic disorders and appreciate the link between pure biochemistry and clinical practice
Course contents	Fibrous and globular proteins. Collagen and elastin diseases. Hemoglobinopathies. Blood plasma proteins. Intrinsic and extrinsic regulation of metabolic pathways. Medical relevance of enzyme inhibition. Major enzymes of diagnostic interest. Enzymes as therapeutic agents. Carbohydrates metabolism - blood glucose homeostasis, hormonal control, inherited metabolic disorders of carbohydrate metabolism. Diabetes mellitus-diagnosis, monitoring and treatment, metabolic changes and long-term complications. Proteoglycans and mucopolysaccharadoses. Lipids and lipoprotein structure and metabolism – major serum lipids, lipid storage diseases, functions of fatty acids in physiology (eicosanoids), defects of fatty acid oxidation and related disorders, hyperlipidemias. Carbohydrate and lipid malabsorption diseases. Steroid metabolism – cholesterol, bile acids, cholesterol gallstone disease. Adrenocortical hormones and CAH. Catecholamine metabolism and secreting tumors. Metabolism of ketone bodies and diabetic ketoacidosis. Nitrogen metabolism, inherited metabolic disorders of amino acid metabolism, organic acidemias, hyperammonemias, cystic fibrosis. Iron and porphyrin metabolism and related disorders. Bile pigments, congenital defects in bilirubin transport, jaundice and differential diagnosis. Purine and uric acid metabolism – synthesis, salvage, degradation, hyperuricemia and gout, Lesh-Nyhan syndrome, ADA deficiency. Pyrimidine metabolism and related disorders. Role of antineoplastic drugs in nucleotide metabolism. Inborn errors of copper metabolism. Oxidative phosphorylation diseases. Metabolic pathways disruption by vitamin deficiences. Alcohol metabolism.

Course title	Biophysics
Number of credits	1 ECTS
Teaching methods	15 labs
Course objectives	1. Reason effectively, think critically, and solve problems. 2. Communicate effectively and apply the basic concepts of physics in speech and writing. 3. Identify and solve problems through scientific inquiry 4. Select and properly use appropriate laboratory technology, equipment and materials, including measuring and sensing medical devices 5. Understand and apply relationships between science, medicine and technology in processing and interpreting experimental data
Course contents	1. BIOPHYSICAL BASICS OF ELECTROTHERAPY definitions of electric current, voltage, intensity, density, resistance (tissue impedance); impact of the electric current on human body (electrochemical effects, cathodal and anodal events, electrophoresis, electroosmosis, electrothermal effects); direct current; alternating current; pulsed current; basic terms (waveform and time - depend parameters, frequency, current modulations); electrodes (types, size and placing); selection of various electric currents and physical quantities; calculating a frequency for different period time 2. USEFULNESS OF ELECTROTHERAPY IN MEDICINE historical review of electrotherapy; trascutaneous electrical nerve stimulation; conventional TENS; acupuncture like TENS; burst TENS; brief - intense TENS; high voltage pulsed current; diadynamic currents (diphase fixe, monophase fixe, courtes periods, longues periods, rhythme syncope, monophase module); interference current; neuromuscular electrical

	stimulation; spasticity management NMES; orthotic substitution (gait training, idiopathic scoliosis stimulation) – FES; Kots current; electrical stimulation of denervated muscle; faradic and neofaradic current; therapeutic procedures in practical use (TENS, Kots, diadynamic and interference); use of modern electrostimulators like Astym, Asterint, Neodym, Diatronic 3. USEFULNESS OF ELECTRODIAGNOSTICS IN MEDICINE electrodiagnostics (degeneration test, strenght - duration test, chronaxie and rheobase, nerve conducting tests: motor nerve conduction, f - wave nerve conduction, sensory nerve conduction, h - reflex response, electromyography); evaluation of S - D curve, chronaxie and rheobase test; use of modern electrostimulators like Astym, Asterint, Neodym, Ditronic 4. BIOPHYSICAL BASICS OF ELECTROCARDIOGRAPHY AND BLOOD PRESSURE MEASUREMENT definitions of pressure and electrocardiogram, ECG; presentation of necessary physical quantities: mmHg, Pascal etc; producing of electric signals in heart muscle; biophysics of S - A node; physiological ECG trace (detailed analyse); calculating of heart rate frequency (before and after physical effort); solving problems concerning artifacts influencing recording of ECG; practical recording of ECG; recognizing different types of connections in ECG technique; Eindhoven triangle and connections by Wilson; practical presentation of ECG recording and it's evaluation; biophysics of circulatory system; systolic and diastolic pressure during blood flow; presentation of different types of medical manometers 5. BIOPHYSICAL PRINCIPLES AND USEFULNESS OF ULTRA VIOLET, INFRARED RADIATION AND SHORT WAVE DIATHERMY IN MEDICINE heat; methods for temperature measurement; effects of heat; endogenic and egzogenic heat; thermoregulation; energy requirement of people; heat transfer; convection; radiation; evaporation; heat application in medicine (IRR, UVR, SWD) 6. PHYSICAL METHODS OF MEDICAL DIAGNOSTICS (ULTRASONOGRAPHY) characteristics of sound wave; infrasound, ultrasound versus audible frequencies; propagation of mechanical energy; wavelenght, frequency, speed of sound; pressure, intensity and dB Scale; production of ultrasound, piezoelectric crystal; characteristics of ultrasound beam, near and far field; interactions of ultrasound with matter - possible side effects; reflection, refraction and attenuation of ultrasound beam; types of imaging in ultrasound techniques: A mode, M mode and B mode; image quality - frequency importance; practical differentation between probes and it's properties; Doppler frequency shift; continous Doppler operation and pulsed Doppler operation; color flow imaging operation; Doppler interpretation - importance of angle and direction of interface move; biological mechanisms and possible side effects of ultrasound 7. PHYSICAL METHODS OF MEDICAL DIAGNOSTICS (X - RAY COMPUTED TOMOGRAPHY AND MAGNETIC NUCLEAR RESONANCE) X - ray production; biophysical properties of X - ray beam ionization; X - ray tubes and generators; basic principles of conventional X - ray imaging; multi dimensional approach in the evaluation of the organ and it's pathology location in a human body; conventional tomography - description of technique and it's importance in improving picture quality layers of visualization; biophysical principles of X - ray computed tomography; pixel and voxel differentiation; importance of slice thickness; X - ray transsmittion measurements, coefficient of absorption; CT numbers and Hounsfield units (HU), Hunsfield scale; linear attenuation coefficient; CT generetions and it's influence on timing and precision of picture; helical CT scanners; radiation dose; reconstruction techniques - biophysical principles of backprojection; importance of "CT window" - benefits of CT imaging over traditional X - ray techniques; X - ray side effects - comparison between traditional radiology and computerized techniques; other digital radiology imaging techniques - digital subtraction angiography - digital processing of signal; magnetization properties; characteristics of the nucleus; characteristics of selected elements potentially useful on magnetic resonance; Larmor equation, Larmor frequency; generation and detection of MR signal (resonance and excitation, return to equilibrium); comparison between T1 and

	T2 relaxations; saturation effects and time of repetition; localization of MR signal (magnetic field gradients, slice select gradient, frequency gradient); MR image characteristics; MRI artifacts; motion as a patient - related artifact; MR instrumentation: permanent magnet versus superconductive wires magnet, gradient coils; biological effects of the magnetic field and contraindications for MRI

Course title	**EBM (Evidence Based Medicine)**
Number of credits	1 ECTS
Teaching methods	4 lectures, 6 seminars
Course objectives	Aims 1.Understand the general concept of EBM. 2.Understand the problems of implementing EBM, and their possible solutions. 3.Understand the clinical effectiveness of a procedure, and the cost of implementation. 4.Understand the concept of evidence. 5.Understand the principles of statistics in EBM. 6.Understand the problems behind carrying out a search of the literature from databases such as Cochrane and Medline. 7.Have an understanding of the different types of literature reviews. Objectives 1.Manage to identify possible problems implementing EBM at the personal level, practice, and patients level. 2.Knows how to seek for evidence, has the ability to develop an answerable question, and strategy to answer the question. 3.Knows how to critically appraise and use the evidence. 4.Knows the how to define and calculate odds ratios, absolute risk, relative risk, NNT, NNH, NNS. 5.Knows how to critically appraise literature reviews, RCTs. 6.Be able to ask a focused research question and to carry out a literature search. 7.Be able to search the Medline and Cochrane database to answer to the clinical query.
Course contents	Lectures: 1. Introduction to Evidence Based Medicine – 2 h 2. Critical appraisal, literature reviews and screening – 2 h Seminars: 1. Overall view of EBM, problems of implementing EBM and possible solutions, understand what constitutes a high quality RCT, meta-analysis – 3 h 2. How to search the literature – Cochrane and Medline databases, literature reviews, publication bias, principles of screening and diagnostic procedures – 3 h

Course title	**Environmental Health**
Number of credits	4 ECTS
Teaching methods	10 lectures, 16 seminars, 24 labs
Course objectives	The course objectives are to teach students the principal concepts of environmental health, the impact of environmental factors on health and their role among risk factors of diseases, as well as to review opportunities for preventive measures. The outcomes of the course include: -knowledge about basic methods used to assess the contribution of environmental factors to health and its disorders, including major diseases; - understanding the role of life-style and physical and chemical factors in etiology of diseases; - awareness of environmental exposure history in medical examination of patients.
Course contents	Goals of environmental health Concept of environmental medicine

	Concept of occupational medicine Environmental burden of diseases Nutrition and eating disorders Stress Air pollution Water pollution Methods of environmental health risk evaluation (environmental epidemiology, biomonitoring, risk assessment)

Course title	**Genetics II**
Number of credits	4 ECTS
Teaching methods	20 lectures, 20 seminars, 20 labs
Course objectives	Bases of clinical genetics Pedigree construction, recognition of inheritance patterns on the basis of pedigree analysis. Division, clinical picture, the risk of recurrence of genetic disorders. Indications, rules, schema in genetic counseling. Prenatal diagnosis
Course contents	Chromosomal abnormalities. Numerical and structural chromosomal aberrations and contiguous gene syndromes. Autosomal dominant, autosomal recessive, and X-linked diseases. Congenital abnormalities. Incidence, definitions, etiology and classification of birth defects. Infertility, fetal loss, human teratology infertility, fetal loss, human teratology. Metabolic disorders and pharmacogenetics. Ethical aspects of clinical genetics

Course title	**Gross Anatomy I**
Number of credits	9 ECTS
Teaching methods	30 lectures, 75 labs
Course objectives	The course will cover all aspects of Human Anatomy with the elements of the clinical and radiological Anatomy. By the end of the course student should be able to recognize on the cadavers the specific anatomical structures useful in clinical practise. Recognize the same structures on the image obtained using different methods (X-ray, CT, MRI). Name and understand the terms that describe the relative positions, sections and regions of the human body. Identify and describe important organs in neural, digestive, cardiovascular, pulmonary and urinary systems. Compare male and female reproductive systems. During the course student should be able to solve selected clinical problems using acquired anatomical knowledge and dissect the specific part of the human body.
Course contents	1. General anatomy: anatomical terminology, terms of relation and direction, parts and regions of human body; 2. Skeletal system: Axial skeleton: vertebral column and thoracic cage; Skeleton of the upper limb: bones and joints; Skeleton of the lower limb: bones and joints; Clinical anatomy of the skeleton; 3. Back: muscles and fasciae, arteries, veins, lymphatic nodes and vessels, innervations; 4. Upper limb: muscles and fasciae, arteries, veins, lymphatic nodes and vessels, innervations: brachial plexus; Topography of the upper limb: shoulder girdle, topography of the axilla, carpal tunnel; Clinical anatomy of the upper limb 5. Lower limb: muscles and fasciae, arteries, veins, lymphatic nodes and vessels, innervations: lumbo-sacral plexus; Topography of the lower limb: muscular space, vascular space, femoral canal, femoral trigon, adductor canal, popliteal fossa, medial malleolar canal, lateral malleolar canal. Clinical anatomy of the lower limb. 6. Thorax: Muscles of the thorax, innervation of the thoracic walls, sympathetic trunk, visceral plexus and ganglia.

	Breast. Lymphatic nodes and vessels of breast & thoracic wall. Thoracic cavity: lungs, pleura, pleural cavity, trachea, bronchi, heart, pericardium ; Selected problems of cardiology. Arteries, veins, lymphatic nodes and vessels of thoracic organs. Anatomical aspects of physical examination (percussion, auscultation). Topography of the thorax: topographical lines, mediastinum superior and inferior. Limits and contents. Clinical anatomy of the thorax. 7. Abdomen: Muscles and fasciae, vessels & nerves of the abdominal walls; Topography of the abdominal walls: rectus sheath; inguinal canal; inguinal triangle. Weak places, inguinal, umbilical, lumbar hernia & hernia of linea alba. Progression of perineum & gastrointestinal tract. Peritoneal cavity. Greater & lesser omentum, omental bursa. Supracolic part of the abdominal cavity: stomach, duodenum; pancreas; liver and gallbladder; Portal circulation & proper circulation of the liver, Spleen. Infracolic part of the abdominal cavity: small & large intestine, mesentery. Autonomic innervations of the abdomen. Arteries, veins, lymphatic nodes and vessels of thoracic organs. Retroperitoneal space. Topography of the Abdomen. Clinical anatomy of the abdomen.

Course title	**Gross Anatomy II**
Number of credits	8 ECTS
Teaching methods	30 lectures, 75 labs
Course objectives	The course will cover all aspects of Human Anatomy with the elements of the clinical and radiological Anatomy. By the end of the course student should be able to recognize on the cadavers the specific anatomical structures useful in clinical practise. Recognize the same structures on the image obtained using different methods (X-ray, CT, MRI). Name and understand the terms that describe the relative positions, sections and regions of the human body. Identify and describe important organs in neural, digestive, cardiovascular, pulmonary and urinary systems. Compare male and female reproductive systems. During the course student should be able to solve selected clinical problems using acquired anatomical knowledge and dissect the specific part of the human body.
Course contents	1. Pelvis: muscles & spaces of pelvis Topography of the pelvis: pelvic diaphragm & muscles of urogenital triangle; Superficial & deep perineal space; Urinary organs: kidney, ureter, urinary bladder. suprarenal gland; Rectum & anus. Male internal genital organs: testis, epididymis, ductus deferens, seminal vesicle, spermatic cord, prostate. Female internal genital organs: ovary, uterine tube, uterus, vagina. Male external genitalia: scrotum, male urethra, penis, perineum. Female external genitalia: pudendum, clitoris, female urethra. Arteries, veins, lymphatic nodes and vessels of pelvis. Lymphatic trunks and ducts. Autonomic innervations of the pelvis. Clinical Anatomy of Pelvis 2. Neurocranium: bones and joints (sutures, synchondroses) Viscerocranium: bones and joints (sutures, Temporomandibular joint. Atlantooccipital joint) Cranial walls; Fontanelles; Paranasal sinuses; Cavities and fossae of the skull: anterior, middle and posterior cranial fossa, orbit, nasal cavity, oral cavity, temporal fossa, infratemporal fossa, pterygopalatine fossa, Canals of the cranium\ Clinical Anatomy of the Skull. 3. Head and neck: muscles and fasciae of the head and neck.

	Topography of the head and neck: Triangles of the neck. Nose: external nose, nasal cavity, paranasal sinuses. Oral cavity: glands of oral cavity: salivary glands; Teeth; Tongue & muscles of tongue. Ear : external ear, middle ear, internal ear; Eye: Eyeball, Extrinsic muscles of eyeball; Accessory organs of the eye. Eyelids and eyebrows. Conjunctiva. Lacrimal apparatus. Pharynx: nasopharynx, oropharynx, laryngopharynx, pharyngeal muscles, Larynx: laryngeal cartilages, laryngeal joints, muscles and cavity, Vessels of the head & neck: arteries of the head & neck, veins of the head & neck, dura and venous sinuses, vessels & lymphatic nodes of the head & neck. Innervation of the head and neck: Cervical plexus; Cranial Nerves 0 – XII. Autonomic nervous system of the head & neck: Sympathetic part, parasympathetic part. Clinical anatomy of the head & neck: CN palsy - clinical views, 4. Central Nervous System (CNS). General anatomy of cerebrum. General anatomical terms of the nervous system - gray matter, white matter, nuclei, ganglion, plexus. Meninges, meningal spaces. Ventricular system of the brain & subarachnoid spaces. Arteries & veins of the brain and spinal cord. Telencephalon. Cerebral hemispheres – structure. Cerebral cortex: primary & secondary cortical areas. Basal ganglia - localization, structure, afferent & efferent pathways. The clinical signs of the cortical and basal ganglia lesions. White matter of the Telencephalon. Limbic system – Structure, connections, function. Dysfunctions of the limbic system. Diencephalon : Thalamus, Hypothalamus, Epithalamus, Subthalamus - structure, connections, function. The clinical signs of thalamus & nuclei of thalamus lesions. Mesencephalon - structure, connections, function. Metencephalon & Myelencephalon: Cerebellum - cerebellar cortex & nuclei. Clinical effects of cerebellar lesions; Pons – structure, Sensory & motor pathways of the pons; Medulla oblongata - Brainstem pathways, nuclei of the cranial nerves & their localization. Reticular formation. Spinal cord: Gray and white matter of the spinal cord. Pathways of the spinal cord. Autonomic nervous system & its division. The clinical signs of spinal cord & autonomic centers lesions. Pathways of the CNS: pyramidal and extrapyramidal pathways. Clinical effects of pyramidal and extrapyramidal pathways lesions. Sensory pathways - localization & dysfunctions; Cerebellar pathways - localization & dysfunction; Pathways of the cranial nerves.

Course title	**Histology I**
Number of credits	3 ECTS
Teaching methods	10 lectures, 15 seminars, 20 labs
Course objectives	The aim of this course is to provide students the knowledge of histology with a special emphasis on structural and functional relationships between tissues and organs. The course also equips students with basic skills needed to recognize and describe the main features of human tissues specimens, what is essential in examining pathological changes in different diseases.
Course contents	The course will cover the histology of the epithelial, connective, muscular and nervous tissues and the organs of lymphatic, endocrine and respiratory systems.

Course title	**Histology II**
Number of credits	4 ECTS
Teaching methods	10 lectures, 15 seminars, 20 labs
Course objectives	The aim of this course is to provide students the knowledge of histology with a special emphasis on structural and functional relationships between tissues and organs. The course also equips students with basic skills needed to recognize and describe the main features of human tissues specimens, what is essential in examining pathological changes in different diseases.
Course contents	The course will cover the histology of the following systems: urinary, reproductive (male and female), digestive, integumetary and special senses (eye and ear).

Course title	**Immunology**
Number of credits	4 ECTS
Teaching methods	19 lectures, 19 seminars, 22 labs
Course objectives	1. Gain familiarity with the vocabulary of immunology 2. Know the conceptual difference between innate and acquired immunity 3. Understand the humoral and cellular mechanisms which underlie acute inflammation and the body's means of regulating these mechanisms 4.Understand the mechanisms which underlie both the Ab based and the cell mediated acquired immune responses and the means by which these are regulated 5.Know the general characteristics of infectious disease agents which create the need for separate humoral and cell mediated immune response mechanisms 6.Gain competency in identifying the pathologic outcomes which may arise as a result of immune responses to foreign agents, and understand the immune mechanisms which underlie these events 7.Understand the means by which immune recognition of self /nonself ;is regulated and be competent to recognize disease states which may arise as a result of the dysfunction of these controls 8.Understand the immune consequences of organ transplantation and the general approaches to managing these consequences 9.Understand the consequences of failure of the various immune response mechanisms and be able to recognize the disease states which result from such failure 10.Understand the logic underlying the use of immune methods for the diagnosis of disease states and have the competence to chose these methods appropriately 11.Understand the mechanisms by which the immune system may affect a) neoplastic disease and by which neoplasia may affect these mechanisms b) allergy c) immunodeficiency d) autoagression
Course contents	Lectures: Natural immunity. Adhesion molecules and MHC. Flow cytometry. T and B cells. RIA and ELISA. Adaptive immune response. Cytokines. Infectious immunity. Autoimmunity. Allergy. Seminars: Immunogenes and antigens. Antibody structure and biological properties of immunoglobulins. Genetic basis of diversity of antibodies. Monoclonal antibodies. Transfusion immunology. Acute phase proteins. Complement. Methods for evolution of humoral and cell – mediated immunity. Immunodeficiencies. Control mechanism in the immune response. Tumor immunity. Transplantation immunology. Immunization. Labs: Direct agglutination. Passive agglutination. Immunofluorescence. The ABO Blood Groups. Antiglobulin (Coombs) test. Precipitation. Complement fixation. Isolation of cells. Immunohistochemistry. E roset formation test. Phagocytosis. Graft matching between donor and recipient. Vaccines. Passive immunization.

Course title	**Introduction to Surgery**
Number of credits	4 ECTS
Teaching methods	10 lectures, 10 seminars, 40 labs
Course objectives	Goals: 1. To provide exposure to the field of surgery in both an inpatient and outpatient setting. 2. Understand the anatomy, physiology, and pathology of surgical diseases. 3. Learn the preoperative and postoperative management of the surgical patient. 4. Learn the technical aspects of general surgery, neurosurgery, cardiothoracic surgery, paediatric surgery, trauma surgery, urology.
Course contents	Introduction to Surgery 1.General surgery Taking history and physical examination in general surgery. Types of sutures. Organisation of operating theathre.Treatment patient with acute appendicitis from start to finish .Assessment, resuscitation and management of patients with acute abdomen. Recognition and management of severe and necrotising superficial infections. Recognise and treat hernia and strangulated hernia. Safely assess the multiply injured patient. Identify and manage the majority of abdominal injuries. Recognise benign lesions of skin and subcutaneous tissues and treat these where appropriate. Recognise and appropriately treat malignant skin lesions. Diagnosis and management, including operative management of primary and recurrent abdominal wall herniae. Diagnosis and management of perforated peptic ulcer. Diagnosis of upper GI haemorrhage,management of some cases, operative management of some cases. Basic management of patients with oesophagogastric disorders, including motility disorders, diagnosis and assessment of malignancy of the oesophagus and stomach. Diagnosis and management of acute gallstone disease including operation. Diagnosis and investigation of malignancy of the biliary tract, pancreas and liver. Diagnosis and the medical and surgical treatment of common benign anorectal diseases – haemorrhoids, fissure, low fistula, pilonidal sinus. Appropriate diagnosis and emergency treatment of benign colon diseases – diverticular disease, volvulus, lower GI bleeding . Diagnosis and the medical and surgical treatment of colonic neoplasia. Diagnosis of rectal cancer. Diagnosis and surgical treatment of inflammatory bowel disease. Diagnosis and management of acute breast infections and cancer of breast. 2.Cardiothoracic Surgery Taking history and physical examination in cardiac and thoracic surgery. Surgical treatment of diseases affecting organs inside the thorax—generally treatment of conditions of the heart (heart diseases - coronary artery diseases, congenital heart disease), lungs (lung diseases) and pleura. 3. Neurosurgery Taking history and physical examination in neurosurgery. Division of neurosurgery: vascular and endovascular neurosurgery, stereotactic,functional and epilepsy neurosurgery, oncological neurosurgery, skull base surgery, spine neurosurgery, peripheral nerve surgery, paediatric neurosurgery. Subdural hematoma (causes, signs, symptoms and medical treatment). Epidural hematoma (causes, signs, symptoms and medical treatment).Hydrocephalus (causes, signs, symptoms and medical treatment). Shaken Baby Syndrome. 4. Paediatric Surgery. Taking history and physical examination in paediatric surgery. NEC. Meconium plug. Oesophageal atresia. Hirschprung disease. Malrotation and midgut volvulus. Diaphragmatic hernia. CCAM. Spina bifida. Pylorostenosis. Intususception. Nephroblastoma. Neuroblastoma. Sacrococcygeal tumor. Fetal surgery – classical indications. 5. Trauma Surgery. Taking history, physical examination in trauma surgery, evaluation and management of the trauma patient. Basic principles of resuscitation. 6. Urology.

	Taking history and physical examination in urology. Hematuria. Benign Prostatic Hyperplasia. Urolithiasis. Uro-Oncology-Prostate Cancer. Incontinence. Erectile Dysfunction. Paediatric Urology – acute scrotal pain in a child, hydronephrosis in neonates, urinary tract infection in a child.

Course title	**Physiology I**
Number of credits	4 ECTS
Teaching methods	20 lectures, 15 seminars, 25 labs
Course objectives	The objectives of this course are to provide a clear and thorough practical working knowledge of the Physiology of major systems within the human body as well as to have students to apply this knowledge to problems and case studies relevant to clinical physiology.
Course contents	Lectures and seminars are devoted to the following topics: 1. Internal environment, homeostasis 2. Body fluids 3. Acid-base balance 4. Blood 5. Excitability 6. Muscles 7. Heart 8. Circulation Laboratories serve to improve manual skills during following classes: 1. Osmosis; surface tension; diffusion; hematocrit 2. RBC counting; determining of amount of hemoglobin 3. Erythrocyte characteristics; erythrocyte sedimentation rate 4. Characteristics and derivatives of hemoglobin; bleeding time 5. Counting of leukocytes; differential white cells count; clotting time 6. Blood typing - AB0 and Rh 7. Cross-matching 8. Counting of reticulocytes and thrombocytes 9. Prothrombin time; blood pressure in humans 10. Heart sounds; arterial pulse; ECG; electrical axis of the heart

Course title	**Polish V**
Number of credits	3 ECTS
Teaching methods	30 labs
Course objectives	**After the course the student is able to:** - speak about past events - speak about medical specialties - use past tense to report past events - name internal organs and describe their location - name hospital wards - describe one's state of health
Course contents	**The course contents comprises:** **Grammar** - conjugation of the verbs in the past tense - the Nominative plural case of nouns - the Locative case of nouns and adjectives - the Accusative case of personal pronouns - prepositions of location - expressions of time - the future tense of imperfective verbs **Lexis concerned with** - holidays and traveling - academic year – courses and timetables - hospital, hospital wards and out-patients' departments - medical specialties - medical condition

Course title	**Polish VI**
Number of credits	1 ECTS
Teaching methods	30 labs
Course objectives	**After the course the student is able to:** - talk about their studies - describe hospital wards - present specialists and medical specialties - talk about their professional plans for the future - evaluate objects and places - find information on cultural and social events
Course contents	**The course contents comprises:** **Grammar** - Genitive and Accusative of nouns. - Instrumental and Locative of nouns and adjectives - making comparisons in Polish – adjectives and adverbs - past tense and future tense revision - cardinal and ordinal numbers – revision **Lexis concerned with** - medical studies: timetables, lectures, seminars, labs - specialists and specialties - clerkships in hospitals and ambulatories - looking for information about leisure time - planning future medical career