

Course title	Biochemistry with elements of chemistry III
Number of credits	5 ECTS
Teaching methods	10 lectures, 30 seminars
Course objectives	This course is designed for students who are entering a medical profession. The course provides a sound foundation for the clinical biochemistry which emphasizes the structure of major types of biological molecules and their roles in cellular metabolism. The course is limited to what is known about humans and disregards plant and most microbial systems.
Course contents	The course covers the following topics: The Molecular Logic of Life Water: The Medium of Life Thermodynamics of Biological Systems Amino Acids, Polypeptides and Proteins Nucleotides and Nucleic Acids Carbohydrates and Cell Surfaces Lipids and Cell Membranes Transport across Cell Membrane Enzymes: Their Kinetics, Specificity, Enzymes: Mechanism of Action, and Regulation. Metabolism and its Regulation – an Overview

Course title	Biochemistry with elements of chemistry IV
Number of credits	6 ECTS
Teaching methods	10 lectures, 50 seminars
Course objectives	This course is designed for students who are entering a medical profession. The focus is human medical biochemistry. The course is limited to what is known about humans and disregards plant and most microbial systems. It emphasizes human metabolism and concentrates on human metabolic pathways in various physiological and pathophysiological states.
Course contents	The course covers the following topics: Carbohydrate Metabolism: Glycolysis and the Catabolism of Hexoses The Citric Acid Cycle as an Example of Amphibolic Pathway Electron Transport and Oxidative Phosphorylation Lipid Metabolism: Lipid Oxidation and Biosynthesis Nucleotide Metabolism Amino Acid and Protein Metabolism, Nitrogen Metabolism and Urea Cycle Biosignaling and Signal transduction Integration and Regulation of Human Metabolism

Course title	Biostatistics, epidemiology & public health
Number of credits	5 ECTS
Teaching methods	10 lectures, 30 labs
Course objectives	The course objectives are to teach students the principal concepts of biostatistics, epidemiology and public health. The outcomes of the course include: - knowledge about epidemiology, public health and biostatistics as well as its contribution to medical research. - understanding the concept of association and causation in medical research - awareness of bias and confounders as well as statistical versus clinical significance in medical research.
Course contents	Epidemiology and its contribution to medical research Population – based prevention and health promotion Assessment of population health status – basic indicators, descriptive epidemiology, analytical epidemiology Randomized controlled clinical trial Bias and confounders in epidemiological studies Evaluating a diagnostic/screening test Epidemiology of infectious diseases Association and causation in medicine. Hill's Criteria Evidence Based Medicine and reference value in medicine

Public Health, historical background, the main targets and tasks
Types of variables, distribution, analysis of correlations
Tests of statistical significance (continuous and categorical variables)

Course title	Ethics & Jurisprudence
Number of credits	3 ECTS
Teaching methods	30 lectures
Course objectives	The course aims at providing students with the intermediate level knowledge of major ethical and legal issues in medical practice as presented in the American legal system. The ethical component of the course refers also to the general history of normative ethical thought taking into account the multicultural profile of the groups of students. Having finished the course a student should be able to recognize the ethical/legal problem in his/her medical practice properly and know the possible solutions.
Course contents	<p>ETHICS AND JURISPRUDENCE I SEMESTER COURSE – 30 HOURS ORGANIZED INTO 15 LECTURES</p> <ol style="list-style-type: none"> 1. Introduction – the subject and major terms of ethics; division of ethics: the place of applied clinical ethics in history of ethics. Philosophical indications and cultural background – comparative outline (extended section including Confucianism for the Taiwanese students). 2. Practicing in a medical office <ol style="list-style-type: none"> a) types of medical practice, allied health professions, licensure, certification, registration. b) Major ethical issues in medical practice; legal answers to clinical dilemma. 3. Law and the courts – classifications of law. Tort liability and medical practice: negligence, invasion of privacy, false imprisonment, fraud. 4. Basic elements of contract law, types of contracts (expressed vs implied). Laws governing minors' rights. Laws governing collections. 5. Medical indications as the starting point in the decision making process. 7-step process. Case analyses illustrating the process. 6. Indications for medical interventions. Inappropriate interventions. Decisions to forgo futile interventions. DNAR orders. Legal consequences of forgoing treatment. 7. Physician's rights and responsibilities. <ol style="list-style-type: none"> a) Entering the relationship; professional judgment; standard of care b) limits of patient rights; failure to cooperate with medical recommendations; termination of contracts 8. Professional liability and medical malpractice – defences to liability suits <ol style="list-style-type: none"> a) affirmative defenses; assumption of risk; comparative negligence; contributory negligence; release of tort-feasor, etc. b) emergency; statutes of limitations c) liability insurance 9. Patient's rights and responsibilities <ol style="list-style-type: none"> a) confidentiality b) informed consent c) medical records 10. Patients' preferences <ol style="list-style-type: none"> a) advance planning; living will; directives to physicians b) Limits of patients' preferences; "parent patriae" and the minors' treatment; parents' preferences harming a child c) mental patients 11. Quality of life – basic terms. Objective criteria for quality of life. <ol style="list-style-type: none"> a) euthanasia, assisted suicide, suicide; b) ethical and legal aspects of the above 12. Enhancing quality of life – rehabilitation medicine, palliative care, care of the dying patient. 13. Other controversial issues in contemporary medical practice <ol style="list-style-type: none"> a) abortion b) stem-cell research c) organ donation 14. Contextual features – allocation of scarce resources, emergency war surgery, etc. 15. Workplace legalities. Physician's public responsibilities

Course title	First Aid
Number of credits	0,5 ECTS
Teaching methods	5 lectures, 5 seminars, 10 labs
Course objectives	<ul style="list-style-type: none"> • Provide comprehensive coverage of the basic science and clinical topics in emergency medicine and first aid • Become skilful at airways management • Become skilful at basic and advanced life support algorithms • Become skilful at automated and manual defibrillation • Learning to dress and bandage • First aid in adult and pediatric emergencies
Course contents	<p>Introduction to first aid. Diagnosis and classification in emergency medicine. Recognition of life-threatening situations. Acute respiratory dysfunction. Diagnosis, etiology, assessment, methods of opening the airways. Cardiac arrest – etiology, mechanisms and diagnosis. Cardio-pulmonary resuscitation. Basic life support algorithm. Cardiac monitoring. Cardiac arrest rhythms recognition. Defibrillation – definition, AED, manual defibrillation.</p> <p>Acute coronary disorders – etiology, diagnosis. Drugs in cardiopulmonary resuscitation. Advanced life support algorithm (ALS). Multiple trauma. Head and neck injury, oral and maxillofacial injury, spinal injury. Coma. Poisoning. Thoracic and abdominal injury, musculoskeletal injury. Wounds and bleeding, dressing and bandages. Effects of heat, cold, electric shock, anaphylactic shock, drowning, diabetes, pregnancy, bites and stings.</p> <p>Pediatric emergencies</p>

Course title	Genetics I
Number of credits	6,5 ECTS
Teaching methods	30 lectures, 30 seminars
Course objectives	Detailed knowledge of laws of inheritance, population genetics, genetics of prokaryotes and viruses. Solving of genetic problems of modes of inheritance in human and other living organisms. Basic information on genetic diseases in human. Mitochondrial inheritance.
Course contents	<ol style="list-style-type: none"> 1. Introduction to genetics <ul style="list-style-type: none"> - explanation of basis genetic terminology: gene, allele; chromosome, homologous, homozygote, heterozygote, genotype, phenotype, genome, karyotype; genetic symbols: how to denote gene, allele genotype gametes 2. Meiotic determination of Mendel's Laws <ul style="list-style-type: none"> - following the process of gamete production considering gene content of cell (how to predict and denote different types of gametes and their frequency) 3. Division of genetic material <ul style="list-style-type: none"> - Segregation of chromosomes and genes during mitosis and meiosis - A play with chromosome (genetic game) 4. Mendelian segregation ratios – examples and analysis (I) <ul style="list-style-type: none"> - interpretation of simple segregation ratios (3:1 and 9:3:3:1): - Punnett square - Chi-square test 5. Analysis of gene inheritance in human: <ul style="list-style-type: none"> - pedigree human analysis: symbols used, analysis of autosomal dominant and recessive inheritance, carriers probability 6. Mendelian segregation ratios – examples and analysis (II) <ul style="list-style-type: none"> - examples of simple Mendelian segregation in human - solving genetic problems (how to determinate segregation ratio, frequency of particular genotype/phenotype) - An idea and application of a test and a back cross (examples) 7. Extension of Mendelian Genetics – allelic and non-allelic genes <ul style="list-style-type: none"> - allelic and non-allelic genes: a complementation test - examples of multiple alleles (ABO blood groups; A and B antigen; Bombay phenotype; secretor locus; Rh antigen; <i>white</i> locus in <i>Drosophila</i>) - solving genetic problems on inheritance of multi-allelic genes) 8. Extension of Mendelian Genetics – modifications of Mendelian ratio

	<ul style="list-style-type: none"> - solving genetic problems on interactions between alleles and genes (partial and over dominance, codominance, lethal genes, epistasis, linkage of genes) <p>9. X-linked traits in humans</p> <ul style="list-style-type: none"> - solving genetic problems on sex-linked inheritance (hemophilia, color blindness, Duchenne muscular dystrophy) - sex-influenced traits <p>10. Genetix mapping</p> <ul style="list-style-type: none"> - estimation of genetic distances in two and three point-test crosses <p>11. Mapping of human chromosomes</p> <ul style="list-style-type: none"> - Human chromosome maps: analysis and interpretation of the results obtained after examination of human-mouse somatic cell hybrids <p>12. Chromosomal aberrations and changes in chromosome number</p> <ul style="list-style-type: none"> - analysis of aberrant human karyotypes <p>13. Quantitative genetics</p> <ul style="list-style-type: none"> - Calculation of the number of polygenes – analysis of F₁ and F₂ progeny <p>14. Polygenic inheritance</p> <ul style="list-style-type: none"> - solving genetic problems of inheritance of quantitative traits <p>15. Population genetics</p> <ul style="list-style-type: none"> - solving genetic problems: estimation of frequency of genes and genotypes in population, calculation of probability of genetic risk in affected and non-affected families
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Course title	Human biology
Number of credits	3 ECTS
Teaching methods	30 seminars
Course objectives	Introduction to Human Anatomy, introduction to physical examination and taking history, introduction to General Medicine
Course contents	<p>1. Medical terminology.</p> <p>2. Introduction to Human Biology. Homeostasis. Stressor. The negative and positive feedback mechanisms with examples. Metabolism: anabolism and catabolism. Anatomical position. Directions in the body. Planes and sections of the body. Body cavities. Regions of the body. Abdominopelvic quadrants. Levels of organisation in the human body. Organ systems</p> <p>3. Skeletal System. Overview: functions of skeleton, structure of bone tissue, classification of bones, ossification. Division of the skeleton: axial and appendicular. Articulations: synarthroses, amphiarthroses, diarthroses. Classification of joints.</p> <p>4. Skeletal System. Bones and joints of the axial skeleton: skull, vertebral column, thoracic cage. Bones and joints of the appendicular skeleton: shoulder girdle, upper extremity, pelvic girdle, lower extremity.</p> <p>5. Muscular System I. Overview: types of muscle tissue: skeletal, smooth, cardiac. Functions of skeletal muscles. Structure of skeletal muscle: morphology, attachments, muscle fiber. Nerve supply, motor unit.</p> <p>6. Muscular System II. Muscles of head, neck, back, chest and abdominal wall. Inguinal canal. Diaphragm. Muscles of upper and lower extremity</p> <p>7. Nervous System. Functions and organisation of the nervous system. Nerve tissue: neurons, neuroglia. Reflex arch. Divisions of the nervous system: central and peripheral, somatic and autonomic. Plexus, ganglion, structure of a nerve, pathway. Development of the central nervous system (outline), divisions of the central nervous system: developmental and clinical. Overview of the central nervous system</p> <p>8. Central Nervous System I. Central nervous system: main structures of brain and spinal cord. Main functions of the structures of CNS.</p> <p>9. Central Nervous System II. Central nervous system: pathways - motor, sensory and associative. Meninges.</p>

	<p>Ventricles and cerebrospinal fluid</p> <p>10. Peripheral Nervous System I. Cranial nerves III, IV, V, VI, VII, IX, X, XI, XII</p> <p>11. Peripheral Nervous System II. Spinal nerves. Cervical, brachial and lumbo-sacral plexus and their branches. Intercostal nerves.</p> <p>12. Autonomic Nervous System Functions and organization</p> <p>13. Sensory System. Receptors and stimuli. General senses: touch, pressure, proprioception, temperature, pain. Gustatory sense and pathway. Olfactory sense and pathway, cranial nerve I. Visual sense: eye structure, accessory structures of the eye, muscles and nerves of the eye movement, visual pathway, CN II. Auditory sense: structure of the ear, acoustic pathway. Sense of equilibrium: static and dynamic equilibrium. CN VIII</p> <p>14. Selected problems related to fulfilled topics</p>
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Course title	Human biology
Number of credits	3 ECTS
Teaching methods	20 seminars
Course objectives	Introduction to Human Anatomy, introduction to physical examination and taking history, introduction to General Medicine
Course contents	<ol style="list-style-type: none"> 1. Reproductive System. <i>Pelvis minor: pelvic inlet and outlet, basic diameters. Pelvic and urogenital diaphragm. Male reproductive system: testes, duct system, accessory glands, external genitalia, hormonal control. Female reproductive system: ovaries, genital tract, external genitalia.</i> 2. Urinary System. <i>Functions and overview of the urinary system. Kidneys, urethers, bladder, male and female urethra</i> 3. Digestive System. <i>Overview and functions of the digestive system. General structure of the digestive tract. Mouth: oral cavity, oral diaphragm, tongue, teeth, salivary glands. Muscles of mastication. Pharynx. Esophagus. Abdominal cavity and peritoneum. Intra- and extraperitoneal space. Stomach, small intestine, large intestine, pancreas, liver, bile ducts. Relationship of abdominal organs to the peritoneum. Portal circulation. Overview of physical examination of the abdomen. Types of abdominal hernia.</i> 4. Integumentary System. <i>Common integumentum: skin, skin derivatives. Functions and structure of the skin. Epidermal derivatives: hair, nails, glands.</i> 5. Blood Vessels. <i>Overview and structure of blood vessels. Arteries and veins, capillaries and their interconnections. Pulmonary and systemic circulation. Main arteries, veins and their branches. Main arteries, veins and their branches. Fetal circulation.</i> 6. Heart. <i>Overview and anatomical structure of the heart. Coronary vessels.</i> 7. Respiratory System. <i>Functions and overview of respiration. Air conducting passages. Thoracic cavity, lungs, pleura, mediastinum. Pulmonary circulation. Primary and accessory respiratory muscles. Thoracic cage mechanics. Overview of physical examination of the chest.</i> 8. Lymphatic System and Body Defense. <i>Functions of the lymphatic system. Components of the lymphatic system: lymph, lymphatic vessels, lymphatic organs. Body resistance: specific and non-specific defense mechanisms. Immunity.</i> 9. <i>Selected problems related to fulfilled topics.</i>

Course title	Introduction to medical analyses
Number of credits	6,5 ECTS
Teaching methods	35 lectures, 30 seminars
Course objectives	The course is designed to meet the needs of students majoring in pre-medicine. The objective of the course is to teach the students basic and modern analytical methods used for separation, identification and quantification of medically and pharmaceutically important substances present in the body fluids and pharmaceutical formulations. Other important aspects of the course include acquainting the students

	<p>with actual procedures and modern instruments needed to work in the analytical laboratory. The students are taught statistical computer evaluation of laboratory data. Upon completion of this course, students will be able to: understand modern analytical techniques used in medical laboratory, select an appropriate method and equipment for separation and detection of different biological or pharmaceutical samples, calculate the content of bioactive compounds in a sample using laboratory measurements, evaluate the results of medical analysis using figures and graphs, make the statistical calculations of analyzed data and interpret the obtained results.</p>
<p>Course contents</p>	<p><i>Introduction:</i> Aims of medical analysis. Organization of quality and safety system in medical laboratory (Good Laboratory Practice, GLP). Sample handling and preparation for medical analysis. Trace quantities.</p> <p><i>Qualitative inorganic and organic analysis</i> Basic concepts. The principles of qualitative analysis of cations and anions. Characteristic reactions for selected cations and anions. The application of presented reactions to identify the electrolytes and metal ions in biological samples. The role of qualitative analysis in control of drug purity. Qualitative analysis of organic compounds, biologically important: fatty acids, amino-acids, carbohydrates.</p> <p><i>Classical quantitative analysis</i> Titration analysis – general rules. Analytical glassware used in titration process. Review of titrimetric methods applied in medical and pharmaceutical analysis: alkacymetry, redoxymetry, complexometry, precipitometry. Sample preparation for each method. Measurements and interpretation of data. Application of titration in medical diagnostic e.g. for determining bicarbonate, iron in blood, HCl in gastric juice and Cl⁻ in pharmaceutical formulations. Gravimetric analysis. Basic concepts. Working with precipitates. Units operations in gravimetric analysis. Apparatus. Evaluation of results. The examples of gravimetric analysis applied in medical laboratory e.g. to control quality of water.</p> <p><i>Instrumental qualitative and quantitative analysis</i> The aim of qualitative and quantitative instrumental analysis. The classification of instrumental methods used in analytical laboratory. Fundamental terms. Parameters characterizing each instrumental technique. Biological sample preparation for respective instrumental method. Instrumentation. Data evaluation.</p> <p><i>Optical methods</i> Basic concepts. Light properties. Beer's Law. Division of optical methods into groups. Review of optical methods: polarimetry, refractometry, ultraviolet-visible absorption (UV/Vis), molecular luminescence, infrared absorption (IR), magnetic resonance (¹HNMR, ¹³CNMR), mass spectrometry (MS), X-ray spectroscopy and radiology. Photoradiation therapy in cancer treatment. Instrumental components for optical methods. Sample preparation. Limits of detection level. Data evaluation. Application of optical in medical diagnostic. Training in interpretation of UV/Vis, IR, ¹HNMR, ¹³CNMR and MS spectra of bioactive compounds.</p> <p><i>Electroanalytical methods</i> Theory and principles of common electroanalytical methods: potentiometry, conductimetry, voltammetry, polarography and electrolysis. Review of instruments used in an electroanalytical method. Sampling. Data evaluation. The pH measurements of biological materials. Application of ion-selectivity electrode in medical analysis. Buffer solutions - preparing and application. Conductimetric control of water quality in medical laboratories. Potentiometric and conductimetric titration in quantitative analysis of pharmaceuticals and biological fluids.</p> <p><i>Chromatographic methods</i> A brief review of chromatography. Fundamental terms: partition and adsorption process. Types of chromatographic methods used in modern laboratories: thin-layer chromatography (TLC), high performance liquid chromatography (HPLC), gas chromatography (GC), chiral chromatography and ion chromatography – basic concepts. Parameters influencing the effect of chromatographic analysis. TLC, GC and HPLC equipments. Sample derivatization for chromatographic analysis. Optimization of chromatographic conditions. The application of TLC, HPLC and GC chromatographic methods in medical sample analysis e.g.: fatty acids, steroids, bile acids. The separation of enantiopure compounds in the pharmaceutical industry with the use of chiral chromatography. Capillary electrophoresis (CE) - principle.</p>

	<p>The application of CE in DNA and RNA analysis.</p> <p><i>Drug design</i> Basic parameters important for drug design. The prediction of lipophilic properties of selected bioactive compounds with the use of chromatographic methods: TLC and HPLC, and also by means of computational programs.</p> <p><i>Statistical evaluation of results.</i> The estimation of analytical methods used in medical analysis on the base of statistical evaluation. Fundamental terms: mean, median, accuracy, precision, absolute error, relative error, standard deviation, limit of detection (LOD) and limit of quantification (LOQ). Data evaluation is accomplished by computer analysis.</p>
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Course title	Molecular biology
Number of credits	3 ECTS
Teaching methods	10 lectures, 20 seminars
Course objectives	<p>The primary objective of this course is to provide students with an advanced understanding and appreciation of current topics in molecular biology and genetic engineering.. General objectives for this course are:</p> <ul style="list-style-type: none"> • To increase your understanding of cellular and molecular biology. • To introduce the essential principles and processes of cell and molecular biology. • To demonstrate major unifying principles that apply to all living organisms. • To help you develop the knowledge and confidence to pursue further studies in the biological sciences. • To introduce you to some methods and experimental techniques used in biological research. • Learn critical molecular biology methods by reading papers. • Understand how the methods work. (e.g. electrophoresis, hybridization) • Understand limitations for these methods. (technical, financial, and ethical) • See how molecular biology is used to answer a wide range of biological and medical questions. • Learn that there are several experimental methods that can be used to get to the same endpoint. • Understand the role of basic research as it is transferred into applied R&D.
Course contents	Detailed analysis of the molecular mechanisms that control the maintenance, expression, and evolution of prokaryotic and eukaryotic genomes. Topics covered in lecture and seminars will include: gene and chromosome structure, DNA replication, genetic recombination, RNA processing, and translation, regulation of gene expression, cell death, oncogenes and cancerogenesis, pharmacogenomics and pharmacogenetics, molecular cloning, transgenesis, gene therapy and molecular aspects of antigen elimination. The logic of experimental design and data analysis will be emphasized.

Course title	Outpatient care practice
Number of credits	3 ECTS
Teaching methods	90 labs
Course objectives	<ul style="list-style-type: none"> - Understanding of family physician role in health care system and share care - preventive medicine for children and adults in primary health care
Course contents	<ul style="list-style-type: none"> - Interview and physical examination of patient - care of the infant, child and adolescent - top twenty of reason for encounter to practice: <ul style="list-style-type: none"> * infection disease sinusitis, pharyngitis, pulmonary infections * cardiovascular risk factors hypertension diabetes mellitus metabolic syndrome * allergic disease * amenia * depresia - medical procedures: ecg., injections, blood pressure measuring glucose level evaluation - vit. D3 deficiency - development - screening test

Course title	Palliative care
Number of credits	3 ECTS
Teaching methods	22 seminars, 8 labs
Course objectives	Students should gain knowledge regarding theoretical, basic knowledge of Palliative Care and Palliative Medicine. They should know the simple rules of verbal and non-verbal communication with the patient, interactions between palliative care team members, how to be with and to care the dying patient. Students should gain abilities to recognize the essential psycho-somatic symptoms of terminally ill patients and their most important needs. Students will learn about Quality of patients Life and how do improve it. They should gain knowledge about basic possibilities of symptomatic treatment of end-of-life patients.
Course contents	Palliative Care- history, philosophy and ethics, forms of care. Interdisciplinary palliative care team- structure and aims. Breaking the bad news. Chronic cancer pain- divisions, assessment, treatment recommendations. Most common somatic symptoms. Quality of Life of terminally ill patients. Depression, anxiety, fear of dying patients. Last hours of terminally ill patients' life. Support of terminally ill patient's family. Palliative Care as a barrier for euthanasia.

Course title	Parasitology
Number of credits	2 ECTS
Teaching methods	5 lectures, 10 labs
Course objectives	Detailed knowledge on anatomical/morphological structure of major human parasites, their ecology, biology and produced diseases (clinical picture, pathogenetic mechanisms of characteristic lesions, diagnosis).
Course contents	<p>I. Protozoa. 1. <i>Mastigophora</i> (flagellates):</p> <ol style="list-style-type: none"> 1) General characteristics of flagellates. 2) Review of species important from medical point of view (geographic distribution, structure and biology of a parasite, epidemiology, clinical picture and diagnostics of caused disease): <i>Giardia lamblia</i>, <i>Trichomonas vaginalis</i>, <i>Dientamoeba fragilis</i>, <i>Trypanosoma gambiense</i>, <i>T. rhodesiense</i>, <i>T. cruzi</i>, <i>Leishmania</i> spp. 3) Flagellates of the alimentary tract of unproven pathogenicity: <i>Enteromonas hominis</i>, <i>Retortamonas intestinalis</i>, <i>Chilomastix mesnili</i>, <i>Trichomonas hominis</i>, <i>T. tenax</i>. <p>II. Protozoa. 2. <i>Sarcodina</i> (amoebae):</p> <ol style="list-style-type: none"> 1) General characteristics of amoebae. 2) Review of species important from medical point of view (geographic distribution, structure and biology of a parasite, epidemiology, clinical picture and diagnosis of caused disease): <i>Entamoeba histolytica</i>, <i>Acanthamoeba</i> spp., <i>Naegleria fowleri</i>. 3) Amoebae of the alimentary tract of unproven pathogenicity: <i>Entamoeba coli</i>, <i>E. hartmanni</i>, <i>E. polecki</i>, <i>E. gingivalis</i>, <i>Endolimax nana</i>, <i>Iodamoeba bütschli</i>. <p>III. Protozoa. 3. <i>Apicomplexa</i>, <i>Ciliophora</i> (ciliates) and species of uncertain taxonomic position:</p> <ol style="list-style-type: none"> 1) General characteristics of the phylum <i>Apicomplexa</i> 2) Review of species important from medical point of view (geographic distribution, structure and biology of a parasite, epidemiology, clinical picture and diagnosis of caused disease): <i>Plasmodium</i> spp., <i>Toxoplasma gondii</i>, <i>Cryptosporidium</i> spp., <i>Babesia</i> spp. 3) General characteristics of ciliates with special regard to <i>Balantidium coli</i>. 4) <i>Pneumocystis carinii</i> (<i>incertae sedis</i> = species of uncertain systematic position) <p>IV. Trematodes:</p> <ol style="list-style-type: none"> 1) General characteristics of digenetic trematodes (<i>Trematoda: Digenea</i>) 2) Review of species important from medical point of view (geographic distribution, structure and biology of a parasite, epidemiology, clinical picture and diagnosis of caused disease): <i>Fasciola hepatica</i>, <i>Fasciolopsis buski</i>, <i>Dicrocoelium dendriticum</i>, <i>Opisthorchis</i> spp., <i>Clonorchis sinensis</i>, <i>Heterophyes heterophyes</i>, <i>Metagonimus yokogawai</i>, <i>Echinostoma ilocanum</i>, <i>Paragonimus</i> spp., <i>Schistosoma</i> spp.

- 3) Case reports.

V. Cestodes:

- 1) General characteristics of cestodes (*Cestoda*)
- 2) Review of species important from medical point of view (geographic distribution, structure and biology of a parasite, epidemiology, clinical picture and diagnosis of caused disease): *Diphyllobothrium latum*, *Hymenolepis* spp., *Dipylidium caninum*, *Taenia* spp., *Echinococcus* spp.
- 3) Case reports.

VI. Roundworms. 1. Nematodes of the alimentary tract:

- 1) General characteristics of roundworms with special regard to nematodes (*Nematoda*)
- 2) Review of species important from medical point of view (geographic distribution, structure and biology of a parasite, epidemiology, clinical picture and diagnosis of caused disease): *Enterobius vermicularis*, *Ascaris lumbricoides*, *Strongyloides stercoralis*, *Ancylostoma duodenale*, *Necator americanus*, *Trichocephalus trichiurus* (= *Trichiurus trichiura*).

VII. Roundworms. 2. Nematodes of blood and other tissues:

Review of species important from medical point of view parasitizing the blood and within solid tissues: *Toxocara* spp. (larva migrans), *Dracunculus medinensis*, *Trichinella spiralis*, *Wucheria bancrofti*, *Brugia malayi*, *Onchocerca volvulus*, *Loa loa*, *Mansonella* spp., *Dirofilaria* spp.

VIII. Arthropods of medical importance. Arachnids. 1. Ticks:

- 1) General classification and characteristics of ticks (*Ixodida*).
- 2) Characteristics of hard ticks (*Ixodidae*): prevalence, morphology (in relation to the parasitic mode of life), biology, life-cycles, developmental stages, medical importance (tick bites, tick paralysis), epidemiology (transmission of micropathogens/diseases: Lyme disease, tick-borne encephalitis, tularemia, Rocky Mountain spotted fever, Boutonneuse fever, babesiosis), review of most medically important hard tick species: *Dermacentor* spp., *Amblyomma americanum*, *Ixodes* spp., *Rhipicephalus sanguineus*.
- 3) General characteristics of soft ticks (*Argasidae*), morphology, developmental stages, medical importance (soft tick bites, allergic reactions, transmission of micropathogens/diseases: encephalitis, relapsing fevers) review of medically important species: *Argas* spp., *Ornithodoros moubata*.

IX. Arthropods of medical importance. Arachnids. 2. Mites:

- 1) General aspects of mites: classification, general characteristics.
- 2) Medical importance of stored-product mites; storage mite atopy; review of most important species (*Acarus siro*, *Tyrophagus putrescentiae*, *Glycyphagus domesticus*, *Lepidoglyphus destructor*).
- 3) House dust mites and house dust mite allergy; review of species (*Dermatophagoides* spp.)
- 4) Parasitic mites of the order *Astigmata* – the human itch mite (*Sarcoptes scabiei*), symptoms of scabies; other itch mites (*Psoroptes*)
- 5) Chigger mite larvae (*Neotrombicula autumnalis* and other species of the family *Trombiculidae*); trombiculosis (= trombiculid dermatitis), tsutsugamushi disease (= Japanese river fever).
- 6) The hair follicle mites (*Demodex folliculorum*, *D. brevis*); symptoms of demodecosis.
- 7) Medical importance of parasitic mites of the order *Gamasida* – *Dermanyssus gallinae*, *Ornithonyssus bacoti*, *Liponyssoides sanguineus*; gamasid mite bites, transmission of micropathogens/diseases (rickettsialpox, Q-fever, tularemia, peste).

X. Arthropods of medical importance. Insects:

- 1) General aspects of *Insecta*: classification, morphology, types of mouthparts, types of metamorphosis, review of orders including insects of medical concern.
- 2) Medical importance of sucking lice (*Anoplura*) – *Pediculus humanus*, *Phthirus pubis*; pediculosis, phthiriasis; transmission of micropathogens/diseases: louse-borne typhus fever, trench fever = Wolhynia fever, louse-borne relapsing fever
- 3) Parasitic bugs – bedbugs (*Cimex lectularius* C. *hemipterus*); kissing-bugs (*Reduviidae*) as vectors of the American trypanosome (*Trypanosoma cruzi*);
- 4) Medical importance of fleas (*Pulex irritans*, *Xenopsylla cheopis*, *Tunga penetrans*, *Nosopsyllus fasciatus*, *Ctenocephalides canis*, *Leptopsylla segnis*); flea dermatitis, fleas as vectors of pathogens/diseases: plague,

	<p>murine typhus fever, fleas as vectors/intermediate hosts of tapeworms (<i>Dipylidium caninum</i>, <i>Hymenolepis</i> spp.).</p> <p>5) Medical importance of mosquitoes (<i>Culex</i>, <i>Anopheles</i>, <i>Aedes</i>, <i>Mansonia</i>); mosquito dermatitis, micropathogens/diseases transmission: malaria, arboviral diseases, filariases.</p> <p>6) Review of dipterans (two-wings) of medical concern: tse-tse flies (<i>Glossina</i>), sand flies (<i>Phlebotomus</i>, <i>Lutzomyia</i>), biting midges (<i>Culicoides</i>), black flies (<i>Simulium</i>), deer flies (<i>Chrysops</i>), bloodsucking muscid flies (<i>Stomyxys calcitrans</i>), myiasis producing flies (<i>Dermatobia hominis</i>, <i>Gasterophilus intestinalis</i>, <i>Hypoderma bovis</i>, <i>Oestrus ovis</i>, <i>Cordylobia antropophaga</i>, <i>Chrysomya bezziana</i>, <i>Cochlomyia hominivorax</i>, <i>Wohlfahrtia magnifica</i>).</p>
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Course title	Propedeutics of oncology
Number of credits	2,5 ECTS
Teaching methods	18 lectures, 2 seminars
Course objectives	The students should learn about the causes of neoplasm, the signs and symptoms of cancer, diagnostic technics and laboratory methods used for cancer screening and diagnosis. The second part of the course presents the risk factors of cancer development and neoplasm prophylaxis. And finally there will be provided data on epidemiology of cancer and its impact on public health in different countries.
Course contents	<p>Lectures:</p> <ol style="list-style-type: none"> 1.Introduction to oncology. Definition of cancer and neoplasm, mutagenesis, cancerogenesis, teratogenesis. 2.Risk factors of cancer development 3.Epidemiology of neoplasm 4.Obesity and cancer 5.Symptoms of cancer 6.Significance of malignancy in public health 7.The role of most common factors involved in the development of malignancy in European, American and Asian populations 8.Prevention of cancer disease 9.Diagnostic methods in oncology

Course title	Sociology of medicine
Number of credits	3 ECTS
Teaching methods	10 lectures, 20 seminars
Course objectives	Aim of the course will be teach students about sociological and cultural base of the society. The course assume that medicine is embedded in society and culture. It means that all social processes are existing in medicine institutions. The outcomes of the course are for example: understanding the following subjects: connections between medicine and society, the role of social class, gender inequalities, culture and dominant model of medicine, social processes in the medical groups as doctors (group dynamic).
Course contents	<p>Course content:</p> <p>Sociology of medicine as subdiscipline of sociology</p> <p>Culture and society</p> <p>Doctor – patient interaction</p> <p>Social group – the doctors staff</p> <p>Ideology and knowledge</p> <p>Technology and information society</p> <p>Hospital and social organization</p> <p>Health care policy and the state</p> <p>Social role (doctor and patient)</p>

Course title	Behavioral sciences (Psychology)
Number of credits	3 ECTS
Teaching methods	15 lectures, 15 seminars
Course objectives	The objectives of the course are to provide students with sufficient knowledge about psychological proceses influencing human behaviour. At the end of the course students should be able to understand patients' reaction to acute health events, to

	recognize the psychological impact of chronic and terminal illnesses, and the adjustments tasks faced by chronically ill patients. Students should be familiar with the main psychological interventions used in health care settings and the efficacy of these techniques and should understand basic principles of good communication and how it affects patients satisfaction with and their adherence to the treatment.
Course contents	Introduction to psychology, the development of human mind's concepts in modern psychology (main theories), cognitive processes: perception and memory; conditioning and learning; intelligence; personality, health and disease; theories of stress and coping; coping with acute illness, chronic illness and dying; the theories and assessment of pain; forming and making impressions, communication and cooperation with patients; psychological interventions in medicine.

Course title	Polish III
Number of credits	0,5 ECTS
Teaching methods	30 labs
Course objectives	After the course the student is able to: <ul style="list-style-type: none"> - describe natural phenomena - name free time activities - understand bus/train timetable, buy bus/train tickets - ask and give directions - communicate at the post office
Course contents	Grammar <ul style="list-style-type: none"> - infinitives combined with other verbs - common adverbs and their superlatives - compound sentences of time Lexis concerned with <ul style="list-style-type: none"> - weather, seasons of the year - sports, hobbies, leisure - travelling - places in town - directions - sending/receiving letters and parcels

Course title	Polish IV
Number of credits	0,5 ECTS
Teaching methods	30 labs
Course objectives	After the course the student is able to: <ul style="list-style-type: none"> - make phone calls – call a taxi, order pizza by phone, phone in the case of emergencies - buy clothes in a shop, ask for different sizes and colors of clothes - pay - express his approval and disapproval buying things - name different parts of the body - express pain, feeling unwell - buy medications at the chemist`s - understand the dialogue between a pharmacist and a customer - ask simple doctor`s questions - understand patient`s complaints - express the events in the past tense - recognize the verbs in the present and past tense - make questions about the underlined parts of the sentences - answer the questions in Polish - name different specialists and specialties - invite people - suggest going to different events - understand specific aspects of culture - use effective communication strategies - develop the awareness of body language
Course contents	Grammar <ul style="list-style-type: none"> - inflection of the nouns - different endings for the adjectives accompanying the nouns - Instrumental and Locative with the expression: I`d like to be / become

- conjugation in the past tense
- personal pronouns

Lexis concerned with

- telephone calls
- revision of numbers
- clothes and colors
- asking about the price, size, color
- making decisions
- changing the mind
- parts of the human body
- feeling unwell
- feeling pain /different kinds of pain/
- shopping at the chemist`s
- dialogue between a pharmacist and a customer
- doctor`s questions
- patient`s complaints
- remedies for the complaints
- specialists and the medical problems
- taking case histories
- past history
- making suggestions about pastimes and invitations
- accepting an invitation
- showing strong enthusiasm
- politely refusing an invitation
- considering the idea
- cultural and social events