**LECTURE SYLLABUS**

**(General medicine)**

**Extrinsic etiological factors**

**Physical factors**

Mechanical influences – injuries, type of wounds, healing and its disturbance

Electrical current

- Alternating, direct, mechanisms of effect, electrical current injuries, principles of safety

< 25 mA cramps, ↑ blood pressure

25 – 80 mA extrasystols

> 80 mA ventricular fibrillation, death

Thermal effects

- General and local (including general response of the organism) impact of cold and heat

- Burns

- Frostbites

- Chilblains

- Hypothermia: core temperature < 35°C, death ~ 24°C

- Hyperthermia: core temperature > 39 °C

- Insolation

- Hyperthermia

Environmental (atmospheric) pressure and its changes

- 760 torr (mm Hg) = 1 ATA ~ 100 000 Pa (100 kPa, 0,1 MPa)

- Adaptation on the higher altitude

- Altitude disease

- Barotrauma

- Decompression illness

- Hyperbaric oxygenotherapy

Radiation – ionizing and non-ionizing

- Classification of radiation, effect of different kinds of radiation on the organism and its mechanisms, diagnostic and therapeutic properties

- Absorbed dose: 1 gray (Gy); whole-body > 2 Gy → radiation illness)

- Radiation illness

- Laser

Noise, infrasound, ultrasound (diagnostic and therapeutic properties)

Kinetosis

**Chemical factors**

Toxins

Site of entrance, mechanisms of effect, toxicity quantification, elimination of toxins, manifestation of intoxication

Examples of important toxic substances and their influence:

- Heavy metals

- Arsenic

- Cyanides

- Carbon monoxide

- Nitric and nitrous compounds

- Organophosphates

- Main plant and animal poisons

Corrosive substances and their effect

Teratogenic, mutagenic and cancerogenic substances

**Biological factors**

Animals, plants, fungi

Infections

* Classification:

- Prions

- Viruses

- Bacteria

- Molds

- Protozoa

- Multicellular parasites – worms, mites, insects

* Transfer mechanisms of infections and penetration of infectious agens into organism
* Mechanisms of pathological effect of microorganisms and multicellular parasites
* Examples of infectious diseases
* Coexistence of human organism with  microorganisms, examples of positive influence of microorganisms on the human

**Social factors**

Mutual influence and interaction of etiological factors