

Course name: Medical aspects of toxicology (USOS Code: B-BMED.2014 Eng)

ECTS: 5

No. of hours: 60 (30 lectures + 30 classes)

Course coordinator: Dr hab. Iwona Wojda, prof. UMCS

Prerequisites: Knowledge concerning human anatomy and biochemistry on the level of high school. Basics of biology

Course description: Lecture: Basic terms used in toxicology. Types and characteristics of poisons present in the human environment. Factors determining toxicity: dependence between the physicochemical structure of xenobiotics and their toxic action. Vulnerability of the body to xenobiotics. Resorption and biochemical transformation of toxins in the body, excretion of xenobiotics. Toxic effects of nicotine, ethanol, acrylamide, pesticides and other compounds to which man can be exposed. Toxic substances of plant origin. Cancer mechanisms and factors causing the formation of tumours. Labs: Assessment of microbiological and toxicological quality of dairy products. Identification of preservatives in food. Antinutritional substances in food. Determination of nitrogen compounds in food products. Honey – physicochemical and antimicrobial properties, examples of toxic compounds in honey. Determination of acetylcholinesterase activity - used as a marker in body poisoning with organophosphorus compounds or carbamates. Determination of microbes in water. Advanced imaging and API-type biochemical techniques for identifying pathogenic fungi, which produce mycotoxins.

Recommended literature: Stine K.E., Brown T.N. Principles of toxicology, CRC Press, Third Edition.