

Course title: HYGIENE, TOXICOLOGY AND FOOD SAFETY

ECTS credit allocation (and other scores): 3

Semester: spring

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Medical and health sciences

Language: English

Number of hours per semester: 50 h (30 lectures and 20 classes)

Course coordinator/ Department and e-mail: Magdalena Polak-Śliwińska/Department of Commodity Science and Food Analysis/m.polak@uwm.edu.pl

Type of classes: classes and lectures

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#### Substantive content

**CLASSES:** Primary and secondary food contamination. Residues of persistent organic compounds (POPs) in food and their influence on enzymatic reactions. Estimating the intake of selected POPs with food and all-day exposure. Chemical compounds intentionally added to food. Isolation and determination of selected plant metabolites in food; anti-nutritional substances. Metals (Pb, Cd, As, Hg) in raw materials and food. Hygienic and toxicological evaluation of plastics, migration of compounds from packaging to food. Food contamination of biological origin and biological hazards of food.

**LECTURES:** General information about poisons and poisonings. The fate of xenobiotics in the body. Risk assessment related to exposure to foreign substances through food, estimation of the intake of toxic substances. Anti-nutritional substances found in food. Substances intentionally added to food. Biological and chemical contamination of food. Heavy metals. The influence of technological processes on food contamination. Monitoring of food chemical contaminants. Institutions shaping the legislation on foreign substances in food. The role of EFSA scientific opinions in terms of toxic effects.

**Learning purpose:** The main goal is to familiarize students with the principles of toxicological assessment of harmful substances in food

**On completion of the study programme the graduate will gain:**

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**Knowledge:** Finds cause and effect relationships between human exposure to certain types of threats and the body's reaction

**Skills:** Based on EFSA opinions, the student assesses the health risks of harmful chemicals taken in food

**Social Competencies:** student constantly improve professional qualifications and can critically evaluate his knowledge

#### Basic literature:

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1. Kotzekidou P. 2016. Food Hygiene and Toxicology in Ready-to-Eat Foods. Chapter 13-23, Academic Press, ISBN: 9780128019160.
2. Kamboj S., Gupta N., Bandral J.D., Gandotra G. 2020. Food safety and hygiene: A review. Inter J Chem Studies, 8(2): 358-368.
3. Lawley R., Curtis L., Davis J. 2008. The Food Safety Hazard Guidebook. RCS Publishing. London. ISBN: 978-0-85404-460-3.
4. Regulation 315/93/EEC on procedures for contaminants in food
5. Regulation 1881/2006 on Maximum levels for certain contaminants in food



Supplementary literature: Opinion of the Scientific Panel on contaminants in the food chain (CONTAM) by  
<https://www.efsa.europa.eu/>

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The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 52

Student's independent work: 23