

Course description

Course abbreviation: KCH/TOXCH
Course name: Toxicology
Academic Year: 2016/2017

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Department/Unit /	KCH / TOXCH	Academic Year	2016/2017
Title	Toxicology	Type of completion	Exam
Accredited/Credits	Yes, 4 Cred.	Type of completion	Combined
Number of hours	Přednáška 2 [Hours/Week]	Course credit prior to	NO
Occ/max	Status A Status B Status C	Counted into average	YES
Summer semester	0 / - 3 / - 0 / -	Min. (B+C) students	not determined
Winter semester	15 / - 11 / - 3 / 3	Repeated registration	NO
Timetable	Yes	Semester taught	Winter semester
Language of instruction	Czech	Internship duration	0
Substituted course	None		
Preclusive courses	N/A		
Prerequisite	N/A		
Informally recommended courses	N/A		
Courses depending on this Course	N/A		

Course objectives:

Aims

The lectures give basic information about the physical and chemical properties of the toxic compounds including their acute and chronic effects on a human organism. It deals with the safety treatment of the toxic compounds and gives information about the first aid in the health or life hazard in the case of careless treatment. The students are informed about the relevant legislation.

Requirements on student

Evaluation of the subject as well as the exam grading is made according to the articles No 31 - 33 in the Regulations on Study and Examinations University of Ostrava

Content

Content

1. week: Toxicology as a scientific branch. Definition and classification of toxicology and poisons. History of toxicology. The special fields of toxicology.
2. week: General toxicology. Factors influencing toxic effect, displays and mechanisms of toxic effect. Toxicokinetics - absorption, distribution, biotransformation and excretion of the toxic compounds. Classification of intoxication.
3. week: The special toxicology of the selected xenobiotics - inorganic compounds I. Carbon monoxide and dioxide, oxides of sulphur, oxides of nitrogen, ozone, hydrogen sulphide, chlorine, fluorine, fluorides.
4. week: The special toxicology of the selected xenobiotics - inorganic compounds II. Arsenic cadmium, mercury, lead, chromium, nickel, barium, selenium, zinc, iron, copper, aluminium, lithium, gold, nitrates and nitrites, hydrogen cyanide and cyanides.
5. week: Special toxicology of the selected xenobiotics - inorganic compounds I. Methane, ethane, hexane, benzene, methanol, propanol, formaldehyde, acrolein, ethylenglycol.
6. week: The special toxicology of the selected xenobiotics - organic compounds II. Benzene, phenol, toluene, aniline, chlorophorm, tetrachloromethane, vinyl chloride, trichloroethylene.
7. week: Pesticides. Insecticides, rodenticides, fungicides, herbicides.
8. week: Toxins of animal origin.
9. week: Intoxication by plants, foods and fungi.
10. week: Intoxication by medicines and drugs.
11. week: Law No. 356/2003 Code (revision of rules of law 440/2008 Code), about the chemical substances and preparations. Globally harmonised system of classification and labelling of chemicals (GHS)
12. week: Elimination and detoxication of xenobiotics. Principles of the first aid in the case of intoxication.
13. week: Biological and chemical terrorism.

Prerequisites - other information about course preconditions

none

Competences acquired

Competences

The students know basic information about the physical and chemical properties of the toxic compounds, including their acute and chronic affecting the human organism. They orientate about the relevant legislation and can principles of the first aid in the health or life hazard in the case of careless treatment.

Fields of study**Guarantors and lecturers**

- **Guarantors:** Mgr. Michal Haluzík, Ph.D.
- **Lecturer:** Mgr. Michal Haluzík, Ph.D.

Literature

- **Recommended:** *Acta hygienica, epidemiologica et mikrobiologica (AHM)1/2001.*
- **Recommended:** Pelclová, D. *Nejčastější otravy a jejich terapie. Galén Praha 2000..*
- **Recommended:** Tichý, M. *Toxikologie pro chemiky. PřF UK , Karolinum Praha 2002..*
- **Recommended:** Bardoděj, Z. *Úvod do chemické toxikologie. 3.LF UK, Karolinum Praha 1999.*
- **Recommended:** Prokeš, J. a kol. *Základy toxikologie. Karolinum UK Praha, 1997.*
- **Recommended:** Vopršalová, M., Žáčková, P. *Základy toxikologie pro farmaceuty. Farmaceutická fakulta UK , Karolinum Praha 2000. &, &.*
- **Recommended:** Marková, H. *Základy toxikologie. PřF OU, Ostrava 1998.*

Time requirements

Activities	Time requirements for activity [h]
Preparation for an exam	50
Consultation of work with the teacher/tutor (incl. electronic)	10
Being present in classes	26
Self-tutoring	14
Total:	100

assessment methods**professional knowledge**

- Oral examination
- Written examination

teaching methods**professional knowledge**

- Monologic (explanation, lecture, briefing)

learning outcomes**professional knowledge - knowledge resulting from the course:**

Competences

The students know basic information about the physical and chemical properties of the toxic compounds, including their acute

and chronic affecting the human organism. They orientate about the relevant legislation and can principles of the first aid in the health or life hazard in the case of careless treatment.

Course is included in study programmes:

Study Programme	Type of	Form of	Branch	Stage	St. plan v.	Year	Block	Status	R.year	R.
Chemistry	Bachelor	Full-time	Chemistry	1	2012	2016	Povinné předměty	A	2	ZS
Biology	Bachelor	Full-time	Společný základ dvouoborového Bc. studia	1	2012	2016	Předměty všeobecné a rozšiřující	B	2	ZS
Biology	Bachelor	Full-time	Společný základ dvouoborového Bc. studia	1	2	2016	Povinně volitelné předměty	B	2	ZS
Geography	Bachelor	Full-time	Společný základ dvouoborového Bc. studia	1	2012	2016	Předměty všeobecné a rozšiřující	B	2	ZS
Chemistry	Bachelor	Full-time	Společný základ dvouoborového Bc. studia	1	2012	2016	Předměty všeobecné a rozšiřující	B	2	ZS
Information Science	Bachelor	Full-time	Společný základ dvouoborového Bc. studia	1	2012	2016	Předměty všeobecné a rozšiřující	B	2	ZS
Mathematics	Bachelor	Full-time	Společný základ dvouoborového Bc. studia	1	2012	2016	Předměty všeobecné a rozšiřující	B	2	ZS
Physics	Bachelor	Full-time	Společný základ dvouoborového Bc. studia	1	2012	2016	Předměty všeobecné a rozšiřující	B	2	ZS
Physics	Bachelor	Full-time	Společný základ dvouoborového Bc. studia	1	2	2016	Povinně volitelné předměty	B	2	ZS
Applied Physics	Postgraduate Master	Full-time	Biophysics	1	2014	2016	Výběrové předměty	C	2	ZS