



**Karolinska
Institutet**

Course syllabus for

Principles of Toxicology, 7.5 credits

Toxikologins principer, 7.5 hp

This course syllabus is valid from autumn 2020.

Please note that the course syllabus is available in the following versions:

[Autumn2015](#) , [Autumn2016](#) , [Autumn2020](#) , [Autumn2021](#) , [Autumn2023](#)

Course code	4TX018
Course name	Principles of Toxicology
Credits	7.5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Toxicology
Level	G2 - First cycle 2
Grading scale	Pass with distinction, Pass, Fail
Department	Institute of Environmental Medicine
Decided by	Programnämnd 7
Decision date	2015-04-09
Revised by	Education committee IMM
Last revision	2020-03-06
Course syllabus valid from	Autumn 2020

Specific entry requirements

A Bachelor's degree or a professional degree equivalent to a Swedish Bachelor's degree of at least 180 credits in biomedicine, biology, cellular and molecular biology, pharmaceuticals, chemistry, medicine, nutrition or biotechnology. And proficiency in English equivalent to English B/English 6.

Objectives

Upon completion of the course, the student should be able to:

Regarding knowledge and understanding

- describe basic toxicological phenomena in the light of normal cellular and biochemical conditions,
- explain the central principles regarding scientific communication, philosophy of science and bioethics,

Regarding skills and ability

- identify and discuss strengths and limitations of different methods to study toxicological effects,

- and their areas of application,
- analyse and discuss scientific articles in the field of toxicology,
- orally present scientific articles,

Regarding judgement and approach

- review and critically assess scientific presentations.

Content

The course contains cell biology and biochemistry from a toxicological perspective, and mechanisms of toxicity. The course includes methods to study if toxic compounds are hazardous to human health (in vivo, in vitro, in silico, epidemiology) or to sustainable development in a global perspective. The course also covers basic applied scientific communication as well as philosophy of science and bioethics.

Teaching methods

Teaching will be in the form of lectures, seminars, journal clubs, and assignments on group- and individual level.

Examination

The examination consists of oral and written assignments, graded Pass/Fail, and a written examination graded Pass with distinction/Pass/Fail. The grade for the course is based on the written examination.

Compulsory participation

Assignments and journal clubs are compulsory. The examiner assesses if, and in that case how, absence can be compensated. Before the student has participated in all compulsory parts or compensated absence in accordance with the examiner's instructions, the student's results for respective part will not be registered. Absence from a compulsory activity may result in that the student cannot compensate the absence until the next time the course is given.

If there are special grounds, or a need for adaptation for a student with a disability, the examiner may decide to deviate from the syllabus's regulations on the examination form, the number of examination opportunities, the possibility of supplementation or exemptions from the compulsory section/s of the course etc. Content and learning outcomes as well as the level of expected skills, knowledge and abilities may not be changed, removed or reduced.

Transitional provisions

After each course occasion there will be at least six occasions for the examination within a two-year period from the end of the course.

Other directives

The course language is English.

Course evaluation will be carried out in accordance with the guidelines established by the Board of Higher Education.

Oral evaluation in the form of a course council meeting will be carried out during the course.

Literature and other teaching aids

Mandatory literature

Casarett, Louis J.; Doull, John

Casarett and Doull's toxicology : the basic science of poisons

Klaassen, Curtis D.

8th ed. : New York : McGraw-Hill, 2013. - 1454 s.

ISBN:9780071769235 (Book + DVD) LIBRIS-ID:14293294

URL: [Contributor biographical information](#)

[Library search](#)

Hayes, A. Wallace; Kruger, Claire L.

Hayes' principles and methods of toxicology

6. ed. : - xxvi, 2157 p.

ISBN:9781842145364 (hardcover : alk. paper) LIBRIS-ID:16954170

[Library search](#)

Handouts and other assigned literature.