Linnæus University

Jnr: 2021/3496-3.1.2.2

Course syllabus

Faculty of Health and Life Sciences
Department of Biology and Environmental Science

4MX305 Miljöriskanalys, 15 högskolepoäng
Environmental Risk Analysis, 15 credits

Main field of study
Environmental Science

Subject Group
Environmental Science

Level of classification
Second Level

Progression
A1N

Date of Ratification
Approved by Faculty of Health and Life Sciences 2022-01-24
The course syllabus is valid from autumn semester 2022

Prerequisites
Basic eligibility for second level studies as well as special eligibility:
- Bachelor degree in science or engineering or the equivalent
- English 6 or the equivalent
- Chemistry 15 hp

Objectives
After completion of the course, the student should be able to:
- search for, and critically evaluate, information about the environmental and health risks of chemical substances.
- independently construct models for calculation of contaminant exposure under different scenarios.
- characterize and critically analyze the importance of uncertainty and variability in environmental and health risk assessments.

Content
- Methods for hazard identification.
- Risk characterization, including basic toxicology, epidemilogy and dose-response relationships.
- Exposure assessments and exposure models.
- Risk characterization, including both deterministic and probabilistic methods.
- Variability and Uncertainty in risk assessments.
- Sensitivity analysis.

Type of Instruction
The teaching consists of prerecorded lectures, seminars, reading instructions for course literature, individual assignments, and one oral group presentation assignment followed by a group discussions. Participation in the group presentation is mandatory

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Examination

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).
The course examination consists of 3 parts, each of which gives 5 credits (U-VG). The first part consists of a written assignment, where the understanding of basic concepts in risk analysis are tested. The second part examines the ability to independently carry out basic exposure calculations and to assess (evaluate the risks with) the exposure obtained. This examination takes place through both a written assignment and an oral presentation followed by a group discussion. The third part is a written assignment, and examine the understanding of, and the ability to apply, simpler methods for probabilistic risk assessments and for describing uncertainty and variability.
To pass the course, all three examinations must be passed (G). To receive the final grade Pass with Distinction (VG), it is required that at least 2 of the partial examinations have resulted in this grade.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.
If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

Other

The course material is presented on a web study site that the students reach through the Internet. Access to the Internet and computers can be found in the school's computer room and at the university library. For distance studies, a computer with internet connection is required.

The course is generally taught in English but the course may be taught in Swedish if only students fluent in Swedish participate in the course.

Required Reading and Additional Study Material

Obligatory literature
Burgman, M. Latest edition. *Risks and decisions for conservation and environmental management*. Cambridge University Press (488 p.).

Reference literature
Paustenbach, D. J. (red). Latest edition. *Human and ecological risk assessment. Theory and practice*. Wiley (1556 p.).