



## Course syllabus

Faculty Board of Science and Engineering  
School of Natural Sciences

4MX005 Miljöriskanlys, 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 Organisational Committee 2009-10-22

The course syllabus is valid from autumn semester 2010

### **Prerequisites**

- Natural science or technical university education, of at least 90 ECTS.
- English B or equivalent

### **Expected learning outcomes**

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

- critically evaluate risk and decision problems within the environmental field;
- structurally and independently address these problems;
- choose and apply quantitative methods in risk assessment, and
- solve analytical problems within research as well as in environmental and health protection, independently and in cooperation.

### **Content**

- Risk and decision problems within the environmental field.
- Methods used for hazard identification.
- Theory of probability and statistics.
- Hazard characterization, dose-response relationship.
- Exposure assessment and exposure models.
- Variability and uncertainty in risk assessment models.
- Risk characterization, including Monte Carlo methods.
- Risk communication and risk management.

### **Type of Instruction**

The teaching consists of presentations, reading recommendations regarding the course literature, individual problem solving, computer laboratory work and interactive group

discussions. Participation in group discussions is mandatory.  
The course participants need access to Internet.

### **Examination**

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

Examination is performed through active participation in group discussions, written tests, literature summaries and written assignments to be submitted during the course.

Examination criteria to pass the course are defined by the expected learning outcomes (see above).

### **Course Evaluation**

Upon completion, the course will be evaluated by filling out an evaluation form. The results of the evaluations are turned into a summary report that will be kept in the administrative archives of the department. The outcome of the evaluation of the previous year, as well as possible measures taken, will be discussed with the educational program organiser, as well as with incoming students at the start of the next course.

### **Required Reading and Additional Study Material**

#### **Obligatory**

Burgman, M. 2005. Risks and decisions for conservation and environmental management. Cambridge University Press. ISBN 0521543010.

Kammen, D.M., Hassenzahl, D.M. 2001. Should we risk it? Princeton University Press, 2001. ISBN 0691074577.

#### **Reference**

Paustenbach, D. J. (red). 2002. Human and ecological risk assessment. Theory and practice. Wiley. ISBN 0471147478.