

Draft programme: Health Risk Assessment: Principles and Applications

November 9-13 2026

Lectures and group assignments are online using Zoom.

Institute of Environmental Medicine (IMM) Karolinska Institutet.

Course director: Anda Gliga

Monday November 9	Tuesday November 10	Wednesday November 11	Thursday November 12	Friday November 13
9.00-9.30 Welcome and introduction to the course (AG)	9.00-9.15 Wrap-up from previous day	9.00-9.15 Wrap-up from previous day	9.00-9.15 Wrap-up from previous day	9.00-9.15 Wrap-up from previous day
9.30-10.30 Introduction of participants	9.15-10.00 Lecture 4: Derivation of health-based guidance values and risk characterisation (AH)	9.15-10.00 Group assignment 1 continued	9.15-10.00 Group assignment 2 continued	9.15-10.30 Group assignment 3 continued
10.30-10.45 Break	10.00-10.15 Break	10.00-10.15 Break	10.00-10.15 Break	10.30-10.45 Break
10.45-12.00 Introduction of participants, group discussions	10.00-11.00 Lecture 4: Derivation of health-based guidance values and risk characterisation (AH), continued	10.15-11.15 Presentation and discussion of group assignment 1	10.15-11.15 Presentation and discussion of group assignment 2	10.45-11.45 Presentation and discussion of group assignment 3
12.00-13.00 Lunch	11.00-11.15 Break	11.15-11.30 Break	11.15-11.30 Break	11.45-12.00 End of course
13.00-13.45 Lecture 1: Concepts in risk assessment (AB)	11.15-12.00 Lecture 5: Weight of evidence assessment (AB)	11.30-12.15 Lecture 7: New approaches and next generation risk assessment (JZ)	11:30-12:15 Lecture 9: Case study 2 (AB)	12.00-13.00 Lunch
13.45-14.00 Break	12.00-13.00 Lunch	12.15-13.15 Lunch	12.15-13.15 Lunch	13.00-17.00 Take home exam handed in at 17.00
14.00-14.45 Lecture 2: Exposure assessment (LS)	13.00-13.45 Lecture 6: European regulatory framework (AB)	13.15-14.00 Lecture 8: Case study 1 (LS)	13.15-14.00 Lecture 10: Case study 3 (MK)	
14.45-15.00 Break	13.45-16.45 Group assignment 1	14.00-14.15 Break	14.00-14.15 Break	
15.00-15.45 Lecture 3: Toxicity testing (AB)	16.45-17.00 Reflection on today's learning	14.15-15.00 Introduction to group assignment 2: Exposure assessment	14.15-15.00 Introduction to group assignment 3: risk characterisation	

		Individual learning	Individual learning	
15.45-16.00 Break		15.00-16.45 Group assignment 2	15.00-16.45 Group assignment 3	
16.00-16.45 Introduction to group assignment 1: Hazard assessment Individual learning		16.45-17.00 Reflection on today's learning	16.45-17.00 Reflection on today's learning	
16:45-17:00 Reflection on today's learning				

Teachers:

AB – Anna Beronius, IMM, KI

AG – Anda Gliga, IMM, KI

AH – Annika Hanberg, IMM, KI

JZ – Johanna Zilliacus, IMM, KI

LS – Linda Schenk, IMM, KI

MK – Maria Kippler, IMM, KI

Course information

Purpose of the course:

The purpose of this course is to build knowledge and understanding of the scientific method to assess risks to humans of exposure to different types of chemicals.

Learning outcomes:

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

- describe the basic concepts and principles of health risk assessment of chemical substances
- explain how different types of data from in vivo/animal, epidemiological and in vitro studies as well as exposure data are used in risk assessment
- assess the relevance and reliability of data used in risk assessment
- derive health based guidance values such as Acceptable Daily Intake (ADI) based on the data
- reflect on the role of health risk assessment in regulatory decision making

Content of the course:

Health risk assessment of chemicals is the scientific method to assess the risk to humans of exposure to different types of chemical substances, such as pharmaceuticals, environmental pollutants, chemicals in cosmetics, clothing or other everyday products and pesticide residues, food additives and other substances in food. The course starts off with introducing the concepts in risk assessment, e.g. aims of risk assessment, role of risk assessment in risk analysis (risk assessment,

risk management, risk communication), different steps in risk assessment (hazard identification, hazard characterisation, exposure assessment, risk characterisation). It moves on to the different types of data from in vivo/animal, epidemiological and in vitro studies as well as exposure data that are used in risk assessment. Thereafter it is discussed how the relevance and reliability of the data is assessed, and how different types of evidence are integrated (for example from animal and epidemiological studies). The principles on how to derive health-based guidance values such as Acceptable Daily Intake (ADI) and to derive Margins of Safety values based on the data are exercised. The course then moves on to provide examples of the role of risk assessment in regulatory decision making. Case studies of different types of risk assessments exemplify how research connects to risk assessment activities. The participants will also discuss how their own research can contribute to risk assessments.

Content of teaching and learning activities:

Welcome and introduction to the course

- Introducing course directors
- Presenting Karolinska Institutet and Institute of Environmental Medicine
- Presenting course (learning outcomes, programme and exam)
- Explaining practical aspects of on-line course, including Zoom and Canvas

Introduction of participants

- Participants introduce themselves using 1-2 PowerPoint slide provided in advance
- Participants get to know each other in group discussions

Lectures

- Lectures on the different topics by teachers from Karolinska Institutet

Group assignments

- Work on group assignment in small groups

Reflection on today's learning

- Individual reflection on What was the most important I learnt today? Are there any open/unclear issues from today?

Wrap-up from previous day

- Discussion based on reflections of learning and open/unclear issues

Presentation and discussion of group assignments

- Each group presents their group assignments
- Other groups ask questions and discuss

Take home exam

- Short answer questions on factual knowledge
- Reflection question on the need for and importance of systematic approaches in health risk assessment of chemicals