

Course Analysis - CH2014

CH2014 Chemical and Microbiological Risk Management in the Work Environment, 7.5 HP

1 Course overview

Course name: Chemical and Microbiological Risk Management in the Work Environment

Chemical and Microbiological Risk Management in the Work Environment

Course code: CH2014

Course instance code: 50912; 10059

School: KTH

Institution: MEDICINTEKNIK OCH HÄLSOSYSTEM

Term: HT24

Examiner: Catherine Trask

Course coordinator: Ann-Beth Antonsson Lundberg

Teachers: Lena Andersson

Number of registered students: 17

Part of program: TTAHM, PRAHA01

Examination modules: RED1, TEN1, ÖVN1

Course goal:

The overall aim is to provide knowledge about chemical and microbiological risk management and ability to apply this knowledge on different types of chemical and microbiological risks at the workplace to prevent health effects and accidents.

The course will provide knowledge within the following topics and ability to use the knowledge in problem-solving:

- ☐ Legislation concerning chemicals and microorganisms.
- ☐ Impact on health and safety.
- ☐ Risk assessment including measurement of air contaminants
- ☐ Control measures that reduce exposure and risks of accidents, through technical and organisational design of work, and workplaces.
- ☐ Adaptation of control measures to the workplace.

By the end of the course, the students should be able to:

1. Describe, exemplify, and explain how all the above-mentioned factors affect safety, health, well-being, and performance.
2. Perform measurements and risk assessments relating to all the above-mentioned factors in order to assess exposure and to be able to propose control measures that eliminate or reduce the exposures. The capability to perform measurement involves knowledge about measuring methods as well as measurement strategies.
3. Describe, discuss, and critically analyse the advantages and limitations of different measuring strategies and be able to interpret and draw conclusions from measurement results.
4. Propose work environment improvements according to the hierarchy of prevention and control concerning the above-mentioned factors
5. Critically discuss risk assessments and control measures in relation to relevant work environment regulations.
6. Describe the EU regulations and Swedish legislation and provisions for all the above-mentioned factors.
7. Find and interpret information about health hazards with chemical products and substances and use this information in risk assessment of handling of and exposure to chemicals.
8. Describe common microbiological risks, in what environments they occur, how such risks can be assessed and how they can be controlled.
9. Describe the demands on employers regarding chemical risks and be able to support organisations and adapt the methods to the organisation's needs and prerequisites.
10. Be able to identify barriers and facilitators for implementation of work environment improvements and to discuss pros and cons of different control measures and strategies.

2 Reported examination modules and overall result of the course

2.1 Course result (50912)

17 students took the course and all passed with the following distribution of the grades

A	B	C	D	E	FX	F
2 (12%)	4 (24%)	2 (12%)	5 (29%)	4 (24%)	0 (0%)	0 (0%)

2.2 1.3 Course evaluation results

Number of Respondents: 17

Answer Count: 5

Answer Frequency: 29 %

1. The course information was well organised, with clear learning objectives and expectations.

Strongly agree	2 (40,0%)
Somewhat agree	3 (60,0%)
<i>Total</i>	<i>5 (100,0%)</i>

2. The course design provided good support for my learning.

Strongly agree	3(60,0%)
Somewhat agree	2 (40,0%)
<i>Total</i>	<i>5 (100,0%)</i>

3. The course gave opportunities for monitoring my own progress and understand what I needed to do in order to succeed with the course.

Strongly agree	2 (40,0%)
Somewhat agree	1 (20,0%)
Neither agree nor disagree	2 (40,0%)
<i>Total</i>	<i>5 (100,0%)</i>

4. I participated actively in the different parts of the course and studied continuously.

Strongly agree	3 (60,0%)
Somewhat agree	2 (40,0%)
<i>Total</i>	<i>5 (100,0%)</i>

5. I felt included and respected in this class.

Strongly agree	4 (80,0%)
Somewhat agree	1 (20,0%)
<i>Total</i>	<i>5 (100,0%)</i>

6. The course had reasonable scope and workload.

Strongly agree	3 (60,0%)
Somewhat agree	2 (40,0%)
<i>Total</i>	<i>5 (100,0%)</i>

7. The assessment was meaningful.

Strongly agree	2 (40,0%)
Somewhat agree	2 (40,0%)
Not applicable, no view, prefer not to answer	1 (20,0%)
<i>Total</i>	<i>5 (100,0%)</i>

8. The course feels relevant and I have developed my competence.

Strongly agree	3 (60,0%)
Somewhat agree	2 (40,0%)
<i>Total</i>	<i>5 (100,0%)</i>

9. What has worked well in the course? (Comments from the students)

“The group project was an experience was super important and helped a lot to develop new skills and acquire new knowledge.

The pre-recorded lectures helped a lot during the study for the exam.

The labs were relevant and fun. A lot of learnings from them. Also the scope was reasonable. The project was also reasonable and very fun. Really great with the video recorded lectures, to be able to go back to them and listen again really contributed to learning and also to be able to learn and have an ok work/life balance. E.g., one can go to gym and listen to lectures or clean or cook. The lectures were fun with the quizzes and the discussions afterwards. Great with the examples of when things go wrong in the workplace, katharsis at its best. Great that the group work is not graded. It is a very unfair grading anyhow since there are students who contribute minimally.

Each module/day was perfectly structured in the canvas. It was really helpful as a study tool.

The lectures have been recorded and provided before the schedule, so students can prepare before class or if they still want to study after the lectures.”

10. What can be developed in the course? (Comments from the students)

“I acknowledge that the prerecorded lectures are in use to help manage time better during the sessions but they fell sort into the interaction between the students and the teachers.

The labs or lab reports could have been designed more individually. I sometimes felt there were too many people for task, which can be done by one person or two people maximum.

The sound in the video lectures was sometimes very low and there are some background sounds sometimes but overall they are fine. The group work is exhausting since there is a pattern (in the education) of which students that project lead and which contribute very little. There should be some follow-up from the teachers/teacher assistant that can see who is doing what and help the group to find a balance. I am not paid by KTH or the fellow students for doing this. It is not reasonable also how it looks in reality so the argument that we need to do this in order to be prepared for work life is not really valid. It adds such an unnecessary burden to the students that has nothing to do with learning. The group projects are too short to start managing people as well in their personal development towards sustainable co-existing. The measurement seminar was good, but feedback regarding that has already been provided after the last lecture/seminar.

The lab for measurement technique can be more explored so the students can receive more benefits.

It would be good to have a reflection for project group work, like who did what parts. Therefore, the teacher can get a picture of project's work and anticipate if some students did not do the project work or had unequal workload.”

11. My overall impression of the course regarding both implementation and content is that it is good.

Strongly agree	1 (20,0%)
Somewhat agree	4 (80,0%)
Total	5 (100,0%)

3 Course coordinator's reflections

The course was developed more than ten year ago and has been developed continuously during these years. Though response rate is low (only five students responded to the enquiry), the main impression is that students are quite content with the course. In addition, there are several comments about the course being fun, which contributes to students' positive view on the course. This impression is supported by personal feedback from students.

During this year, problems with organising project work have been discussed.

3.1 Changes introduced for the next course offering

For the coming years the following actions will be taken;

Efforts will be made to identify potential project work well ahead of the course. This will facilitate for students as there has been difficulties finding project works and also hopefully improve the relevance of the project works.

Several students have discussed the project work and uneven distribution of the work. For the coming years, instructions about the project work will be further developed in order to achieve a more even distribution of the work between students.

In general, the recorded lectures are appreciated, though there have been some suggestions that the students could listen to the lectures by themselves. However, the recorded lectures are integrated with the discussions and quizzes following the recorded lectures. In addition, previous courses have shown that some students do not look at the recorded lectures when they are not part of the lectures. For coming course, the reason for the recorded lectures will be explained more thoroughly.

There have been some comments on the sound in recorded lectures. Experience from the course is that some students have problems with the settings in their own computers.

In a few recorded videos, there are disturbing sounds. These videos have or shall be revised to remove those disturbing sounds.

The instructions for the measurement lab will be improved and describe how to measure in more detail.