

SYLLABUS

Human Factors in Maintenance 7.5 credits D7013B

Mänskliga faktorer för underhåll

Course syllabus admitted: Autumn 2023 Sp 1 - Present

**DECISION DATE
2022-02-10**

Human Factors in Maintenance 7.5 credits D7013B

Mänskliga faktorer för underhåll

Second cycle, D7013B

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5	Underhållsteknik	Other Subjects within Technology

Entry requirements

D7007B Maintenance Engineering or equivalent

Selection

The selection is based on 30-285 credits

Course Aim

Knowledge and Understanding

After completing the course, the student should be able to show knowledge and understanding:

- For how theories and methods in psychosocial work environment can be applied

Competence and Skills

After completing the course, the student should be able to show the ability to:

- Understand how people's performance in maintenance work is affected by ergonomic factors
- Gather information in a problem concerning people in maintenance work and apply methods
- Evaluate and critically review information collected from studies
- Critically discuss how psychosocial work environment affects people in operation and maintenance work
- Identify, describe, and solve problems related to ergonomic factors
- Present and discuss orally and in writing

Judgement and approach

After completing the course, the student should be able to show the ability to:

- Make assessments of maintenance work about psychosocial and ergonomic aspects
- Show insight into the human role in the work environment from a sustainable perspective

Contents

Basic principles for ergonomics, safety and working environment. Ergonomic factors and their impact on the physical and psychosocial work environment. The course deals with how the interaction between people and the work environment can be understood and developed from a psychosocial perspective, as well as how maintenance work is affected by human factors. More specifically, the course touches on how human information processing, perception, attention, memory, thinking, decision-making and stress levels affect the interaction between people and the work environment during maintenance work.

Handling of human error. More specifically human performance and limitations, workload, stress, risk management, safety culture and organizational norms, communication and teamwork, leadership. And how gender equality in working life affects the work environment. The course introduces several different methods for analyzing the work environment (eg PEAR model, FAIR model) as well as methods for examining human abilities and limitations in maintenance work (eg HFACS-ME).

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

The teaching is based on seminars with oral and written presentation. In order to achieve the course's goals regarding knowledge and understanding, the student should independently study the specified course literature and other literature provided during the course and take part in seminars and exercises.

To achieve the course's goals regarding skill and ability, the student should participate actively during seminars and in written and oral presentations. Seminars train the ability to collect and evaluate information by using different methods and theories. Through presentations and discussion, the ability to identify, describe, solve, and critically examine problems and phenomena related to the interplay between human misconduct and the work environment is also trained. To achieve the course's goals regarding judgment and attitudes, the student should actively participate in seminars, discussions and presentations and actively study the course literature. The ability to see psychosocial challenges in maintenance work from a sustainable perspective is trained through discussions and reflection.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. Knowledge and understanding are examined mainly through seminars and assignments. Skills and abilities as well as judgment and attitudes are examined through project assignments and oral and written presentation. Oral presentation takes place through presentations and discussions. Written reporting takes place via assignments, project assignments and reflections. All included examination parts must be completed for the final grade in the course (7.5 credits, grade scale: G 3 4 5).

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Course offered by

Department of Civil, Environmental and Natural Resources Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0003	Project assignment, presentations and assignments	G U 3 4 5	7.5	Mandatory	A22	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Assistant Director of Undergraduate Studies Eva Gunneriusson, Department of Civil, Environmental and Natural

Resources Engineering 2022-02-10

Syllabus established

by Assistant Director of Undergraduate Studies Eva Gunneriusson, Department of Civil, Environmental and Natural Resources Engineering 2020-02-14