Faculty of Health, Science and Technology
Mechanical Engineering

Syllabus

Ergonomics

Course Code:	MSGB54
Course Title:	Ergonomics *Ergonomi*
Credits:	7.5
Degree Level:	Undergraduate level
Progressive Specialisation:	First cycle, has only upper-secondary level entry requirements (G1N)

Major Field of Study:
MTA (Mechanical Engineering)

Course Approval
The syllabus was approved by the Faculty of Health, Science and Technology 2026-02-02, and is valid from the Autumn semester 2026 at Karlstad University.

Prerequisites
General entry requirements plus upper secondary level Physics 2, Chemistry 1, and Mathematics 3c/Mathematics D, or Physics level 2, Chemistry level 1, and Mathematics Further level 1c. An equivalence assessment can be made.

Learning Outcomes
Upon completion of the course, students should be able to
1. apply basic knowledge of physical ergonomics such as physical load, anthropometry, biological variation, and biomechanics,
2. explain and apply basic knowledge of cognitive ergonomics such as perception, memory, information processing, attention, learning, decision-making, stress, mental workload, and maltreatment,
3. apply basic knowledge of physical factors affecting human beings in relation to light, lighting, sound and noise, climate and vibrations,
4. identify and relate factors affecting human performance in the interaction with products,
5. analyse and reflect upon the results of ergonomic analysis of product systems and draw conclusions and give recommendations for product improvement,
6. present a completed ergonomic analysis of product and workplace orally and in writing, and
7. prepare documents for production ergonomic analysis.

Content
The introductory part of the course is theoretical and includes lectures and study of course literature on
- basic anatomy and physiology,
- workload ergonomics, system ergonomics, and information ergonomics,
- product ergonomics, and
- production ergonomics and design.

The second part of the course involves application of theory in the form of a minor project, workshop and model-making in a physical workshop. Students study and make observations of products and workplace design to collect facts for analysis and assessment.

Supervision is provided for the duration of the course. Reregistered students are only offered supervision if circumstances permit.

Reading List

See separate document.

Examination
Assessment of the theoretical component is based on an on-campus written exam.

Assessment of the applied component concerning a workplace analysis is based on an oral presentation and a written assignment as well as a written report completed in groups. The individual product analysis is assessed based on an oral presentation, including a physical representation of the proposed product improvement. The presentation must also be submitted in writing.

If students have a decision from Karlstad University entitling them to Targeted Study Support due to a documented disability, the examiner has the right to give such students an adapted examination or to examine them in a different manner.

Grades
One of the grades Pass with Distinction (VG), Pass (G), or Fail (U) is awarded in the examination of the course.

Quality Assurance
Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

Course Certificate
A course certificate will be provided upon request.

Additional information
The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.