UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Material Processing Technology G2F

6 credits

Course code: MT508G
Version number: 10
Valid from: 1 July 2023
Ratified by: Curriculum Committee for Engineering Science
Date of ratification: 9 February 2023

1. General information about the course

The course is provided by the University of Skövde and is named Material Processing Technology G2F (Bearbetningsteknik G2F). It comprises 6 credits and is a first-cycle course. The level of progression is G2F.

The course is a part of the main field of study in Mechanical Engineering. The disciplinary domain of the course is Technology.

2. Entry requirements

The course has the following entry requirements: passed PR312G Manufacturing Engineering and Materials Science G1F and passed FY128G Thermodynamics G1N and attended MT351G Mechanics IV G1F and attended MT507G Machine Elements G2F (or the equivalent).

3. Course content

The course aims to provide a deeper insight into the physics and mechanics that govern cutting processing. Different types of machining processes such as drilling, milling, grinding and turning are studied. The course focuses mainly on metallic work materials. The mechanisms that govern chip shape, temperature generation, abrasion and vibration are analyzed in detail. Furthermore, different types of machines, tool inserts and fixtures are described from a broader perspective. The course further aims to provide a basic understanding of how a processing process can be performed or how an existing process can be improved. Finally, the students will write a report based on research in the subject area. The ability to develop scientific writing is also an important part of the course as well as to actively work with peer reviewing.

4. Objectives

After completed course the student should be able to:

- account for the physical conditions in the cutting zone and how these affect machining processes,
- analyze the wear of a tool by considering the choices of cutting parameters linked to the material in both the tool and the workpiece,
- describe different types of machining processes and their industrial applications,
- describe how the cutting ability varies between traditional working materials and how this affects the machining process,
- perform technical cutting calculations and analyze the result for a machining process,
- demonstrate knowledge of current research in the field of cutting processing
- critically review sources, evaluate and select scientific theories and facts, refer to the sources used and summarize the current knowledge within the current subject area,
- review collegial work in a scientific way.

5. Examination

The course is graded A (Excellent), B (Very good), C (Good), D (Satisfactory), E (Sufficient) or F (Fail).

The examinations of the course consist of the following modes of assessment:

- **Written assignments**
  4 credits, grades: A/B/C/D/E/F (determines the final grade)
- **Supervised written examination**
  2 credits, grades: G/U

Students with a permanent disability who have been approved for directed educational support may be offered adapted modes of assessment.

6. Types of instruction and language of instruction

The teaching is comprised of seminars, project work and lectures.

The teaching is conducted in English.

7. Course literature and other educational materials

Kalpakijan S. & Schmid S. R (2022). *Manufacturing Engineering and Technology in SI Units* (8th ed). Pearson Education. ISBN 9781292422244.

Handed material.

8. Student influence

Student influence in the course is ensured by means of course evaluation. The students are informed about the results of the evaluation and potential measures that have been taken or are planned, based on the course evaluation.

9. Additional information

Further information about the course, as well as national and local governing documents for higher education, is available on the website of the University of Skövde.