



## Final competences

- 1 Have systematic and applied insights in different physical and (bio)chemical processing technologies and industrial processes to extract resources from ores, solid, liquid and gaseous waste materials, generated throughout the value chain, and transform them into valuable products;
- 2 Have insights in factors affecting the sustainable supply of raw materials and (technological) solutions for optimising material flows in the different parts of the value chain, and be able to compare them, taking technical and economic aspects as well as social and environmental impacts into account;
- 3 Be able to select, apply and develop innovative technologies for optimising material flows in the value chain;
- 4 Express openness to innovative scientific developments and their applications in a broad scientific, economic and social context;
- 5 Be able to identify the short- and long-term future consequences of plans and decisions along the entire value chain from an integrated scientific, economical, ethical and intergenerational perspective, and merge this into a solution-focused approach, moving towards a sustainable society;
- 6 Have awareness regarding global and long-term dimensions of sustainability and a capacity to identify sustainability issues at local, regional and global scales, involving different stakeholder perspectives;
- 7 Assess risks related to different approaches that can be used to increase resource sustainability in the value chain, develop scenarios and mitigation strategies, and assess environmental and social impacts, as well as technical and economic feasibility of these approaches and strategies.

## Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

## Conditions for exam contract

This course unit cannot be taken via an exam contract

## Teaching methods

Group work, Seminar, Excursion, Lecture, Independent work, Peer teaching

## Study material

None

## References

## Course content-related study coaching

## Assessment moments

continuous assessment

## Examination methods in case of periodic assessment during the first examination period

## Examination methods in case of periodic assessment during the second examination period

## Examination methods in case of permanent assessment

Oral assessment, Participation, Assignment

## Possibilities of retake in case of permanent assessment

examination during the second examination period is possible in modified form

## Extra information on the examination methods

The students are given tasks related to each of the course components, which are evaluated by the lecturer in charge.

## Calculation of the examination mark

Marks are distributed over the different tasks and participation in the different course components, taking into account the workload.

Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.

