

## Circular Economy for Materials Processing

**Subject area:** Entrepreneurship

<b>University:</b>	TalTech
<b>Level:</b>	MA all years, PhD
<b>Teaching mode:</b>	completely online, not time-specific
<b>Instructor(s):</b>	Karin Robam

### Short description

The aim is to build knowledge and capacity in state-of-the-art circular economy and resource efficiency practices – in order to ensure that future graduate engineers have the skills to develop more sustainable processes in raw materials value chains. With the help of virtual course materials, students build their professional and entrepreneurial skills in resolving real-life project assignments by presenting business ideas on overcoming the assigned problem.

### Full description

<https://ois2.ttu.ee/uusois/subject/NGG0401>

### Learning outcomes

At the end of the course, the learner will be able to define basic concepts of circular economy; describe materials flow (from mining, processing, and manufacturing until end-of-life recycling and re-usage); list issues and drivers for a change; recognize impacts (environmental, economic, and social) of the current practice of materials processing from a sustainability aspect; understand how to create new business opportunities to re-enter materials into the circular economy.

### Recommended in particular for students of the following study programmes

Any master-level student can participate who is eager to learn about raw materials processing, i.e., from exploration, mining, processing, and manufacturing to material recycling and re-use thru the lens of resource efficiency and circular economy.

### General information

**Contact hours per week:** The course contains virtual study materials/videos/additional study materials (articles, reports, videos). Students learn the basics of the raw

materials value chain individually. There are no contact lectures, but approximately 4 contact hours per week s

**Total workload:** 156 hours (in student hours for the whole course)  
**ECTS credits:** 6  
**Language:** English

**Course start date:** 30 January 2023

**Course end date:** 14 June 2023

**Add. info about start date:**

**Weekly teaching day/time:** The course contains online study materials (additional study materials - articles, reports, videos). Students will individually learn the basics of the raw materials value chain. Students will have access to the course in Moodle at the beginning of the semester. Over a week, students have to take an online test based on the beforehand covered topic.

**Time zone:** CET +1 (Estonia, Israel)

**Further information:**

**Prerequisites:** Prior knowledge is not required to take the course. The core idea of the Master's course "Circular Economy for Materials Processing" is to give an overview of raw materials processing, i.e from exploration, mining, processing, and manufacturing until material recycling and reuse thru the lens of resource efficiency and circular economy.

**Activities and methods:** Self-study, The course contains online study materials (additional study materials - articles, reports, videos). Students will individually learn the basics of the raw materials value chain. Students will have access to the course in Moodle at the beginning of the semester. Over a week, students have to take an online test based on the beforehand covered topic.

**Presence on campus:**

## Final examination

**Form:** By the end of the course, students have to take 6 tests and submit the project report. Students can choose project reports to work with from prepared assignments or propose their topic, which has to be related to increased resource efficiency of the raw materials or integrating circular economy principles. Students have to submit the pre-recorded video with their project report. The length of the video should be 3-5 minutes - The most important thing is to bring out the problem that was worth solving and describe your proposed solution for that.

**Date:**

**Location/format:** 6 tests and project report

<b>Re-sit possibility:</b>	yes
<b>Transcript available:</b>	end of semester
<b>Add. info/requirements:</b>	Students must take 6 tests and submit a project report and pre-recorded video in due time.

## Registration

To register for this course, follow the registration requirements of your **home university** as specified here: [www.euroteq.eu/courses-registration](http://www.euroteq.eu/courses-registration).

## Administration

<b>Number of places:</b>	30
<b>Minimum participants:</b>	
<b>Internal course code:</b>	NGG0401
<b>Contact:</b>	karin.robam@taltech.ee

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*This course is part of the EuroTeQ Engineering University joint course catalogue 2023. This is a collaborative activity of the partner universities DTU, L'X, TU/e, TalTech, CTU, TUM as well as Technion. Students from these universities can participate in the offered courses. It is the responsibility of the student to check if you fulfil the requirements to participate in a specific course. Students are also advised to check with their home institution how to get recognition of the ECTS credits gained in courses of the EuroTeQ course catalogue. For further information about EuroTeQ Engineering University, visit [www.euroteq.eu](http://www.euroteq.eu) or get in touch with the above-mentioned point of contact.*