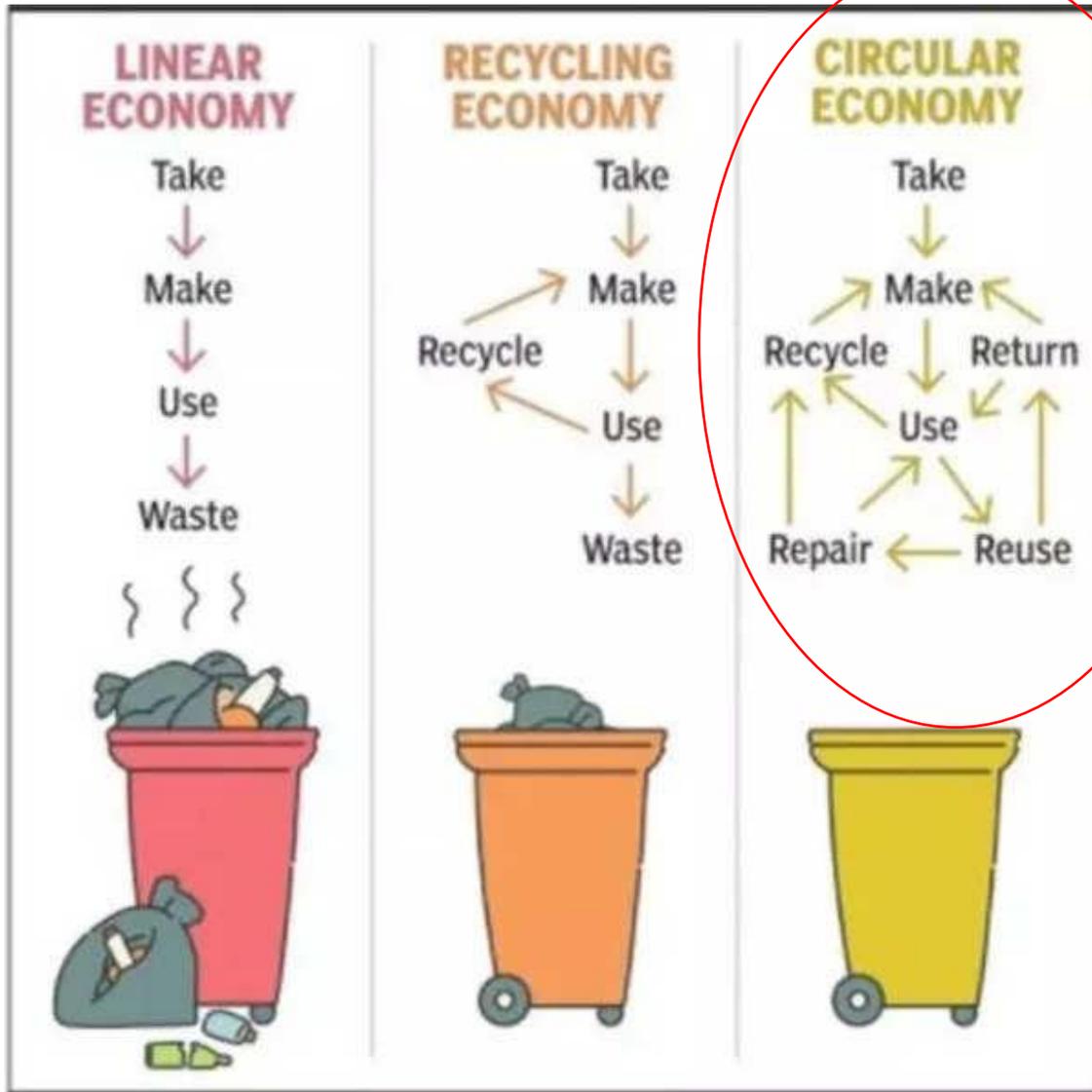


How to get Systemic Thinking to be a Learning Outcome of a Master's Program?

Silja Kostia, Principal Lecturer,

Head of Master's Degree Programme Risk Management and Circular Economy

MEL17



According to Ellen MacArthur Foundation “A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems” ([ref](#)).

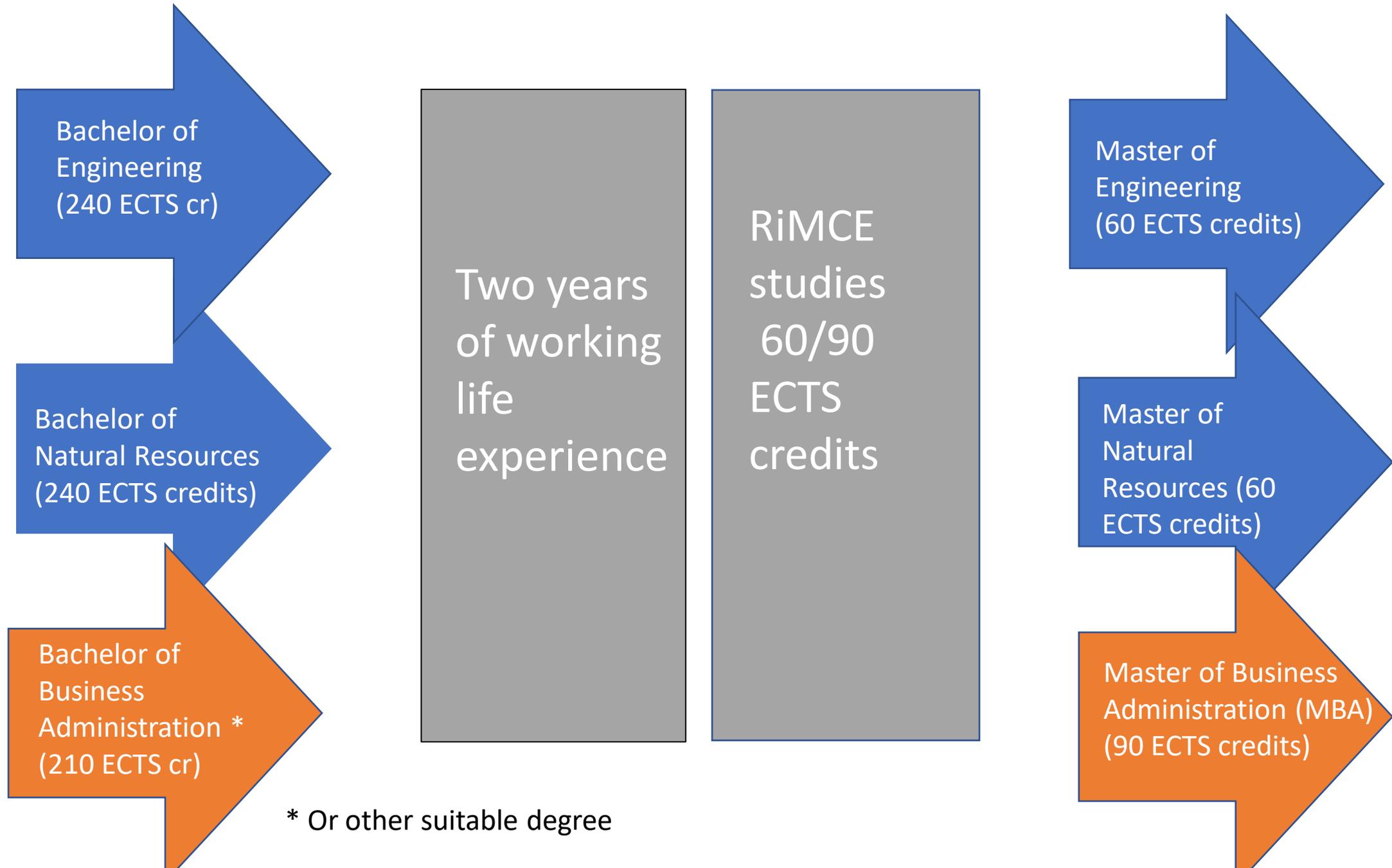


RiMCE concept

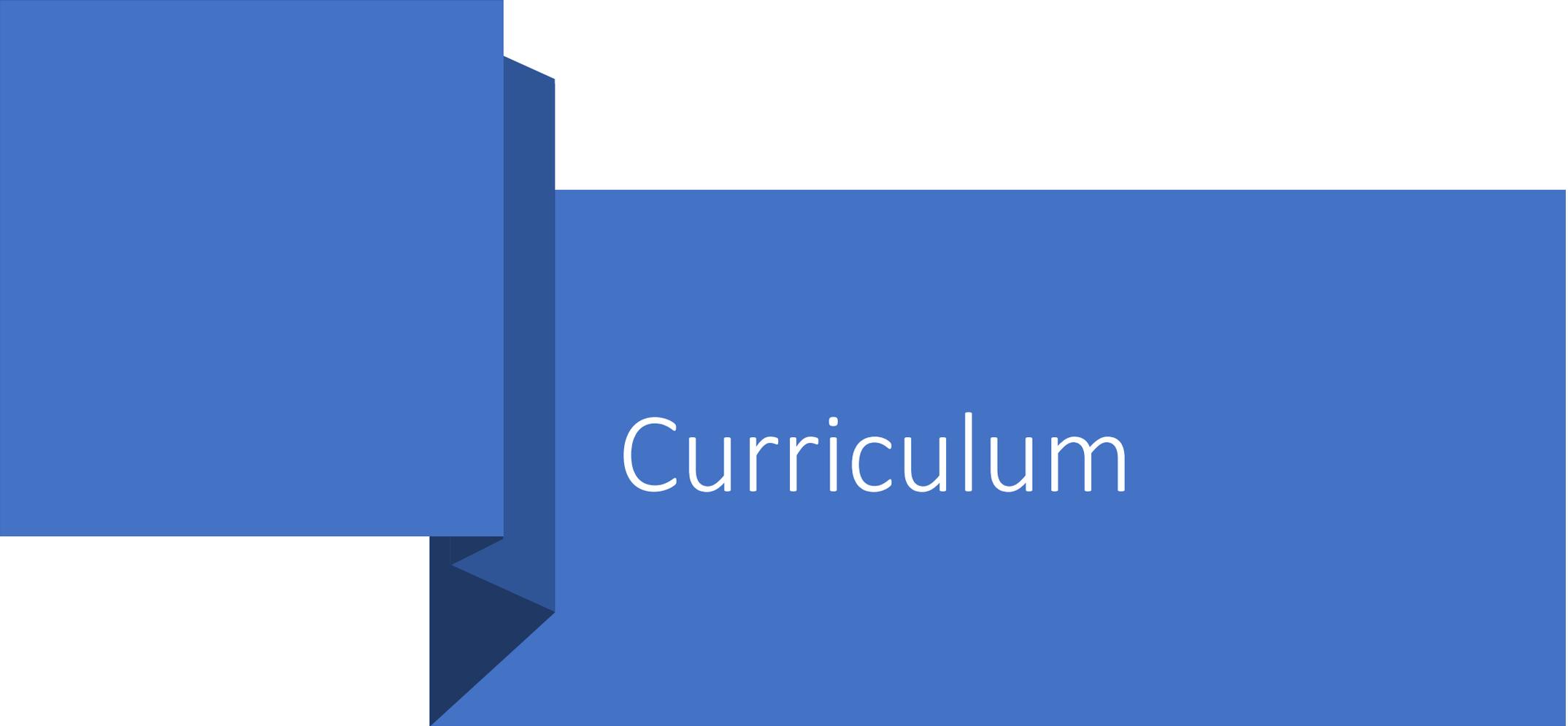
Circular economy professionals are needed because

- Climate change, the loss of biodiversity and over-consumption of raw materials requires **professionals of a new kind** with awareness of planetary boundaries, a solution-centric and change-agent's mindset **to lead the change towards a more sustainable future.**
- RiMCE brings people **with diverse professional and educational backgrounds** to study **by collaborative learning** giving the graduates competence needed in a modern working life.
- The circular economy and risk management knowledge and skills are integrated into students' **professional competence.**





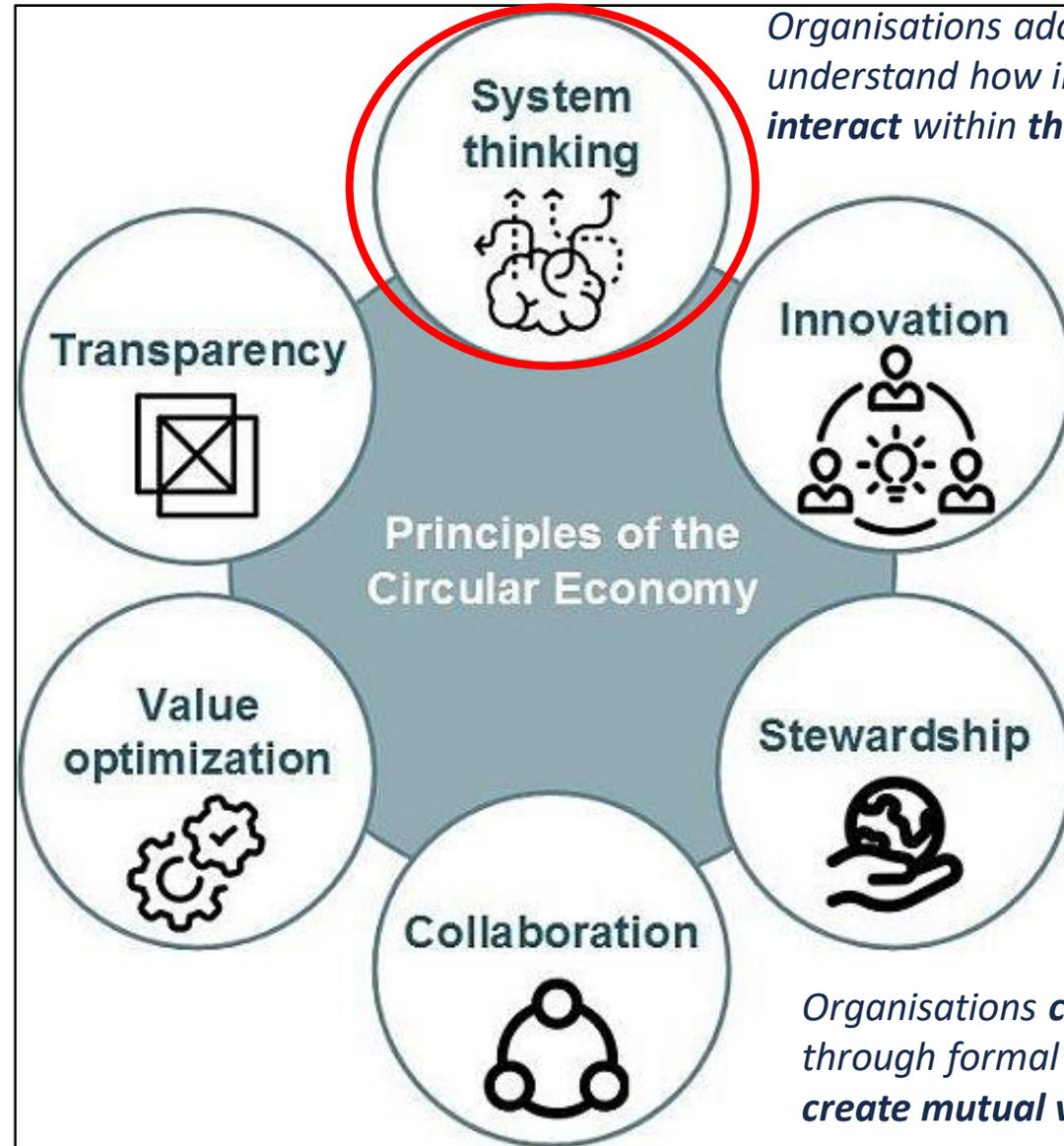
* Or other suitable degree



Curriculum

Organisations are **open about decisions and activities** that affect their capacity for transition towards a more circular and sustainable mode of operation and are willing to **communicate** these in a clear, accurate, timely, honest and complete manner.

Organisations **maintain** all products, components and materials **at their highest value and utility** at all times.



Organisations adopt a **holistic approach** to understand how individual decisions and activities **interact within the wider system they are part of.**

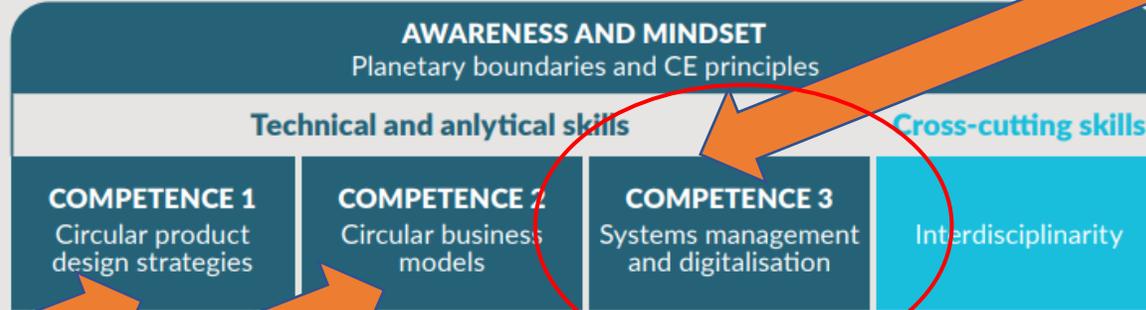
Organisations continually **innovate to create value** by enabling the sustainable management of resources through the **design of processes, products/services and business models.**

Organisations **manage the direct and indirect impact** of their decisions and activities within the wider system they are part of.

Organisations **collaborate internally and externally** through formal and/or informal arrangements to **create mutual value**

Model of the Circular Economy CEC framework

← General knowledge →



System thinking,
Stewardship,
Transparency

Collaboration,
Innovation

Innovation
Value Optimization

Deep knowledge ↓

DISCIPLINARY AND SECTORAL SPECIALISATION
In CE i.e.,
LCA experts,
(re)cycling experts,
renewable energy experts
etc.

TOWARDS A CIRCULAR ECONOMY
Skills and competences for STEM
professionals

Autumn term

Spring term (plus next autumn term)

Kick off for Risk Management and Circular Economy

Circular Economy Value Chains and Consumer Engagement

Sustainability Measuring and Life Cycle Assessment (LCA)

Academic Research and Practices

MBA 20 + 20 + 20

MEng M Natural resources

20 + 10

Company Financial Management

Leadership and Intercultural Communication

Development of Circular Economy Business

Innovation Pipeline of Circular Economy Products and Services

A free choice course

A free choice course

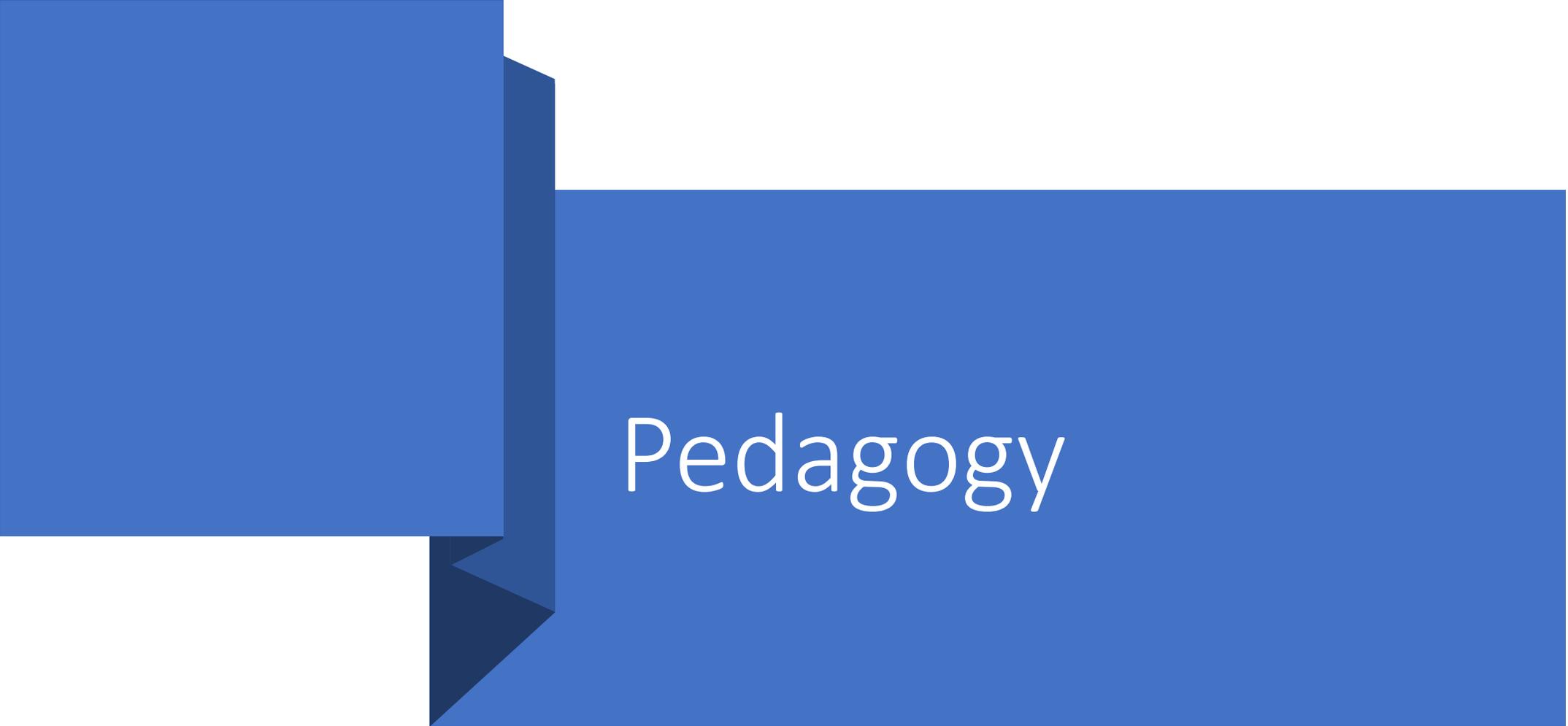
A free choice course: Megatrends and Future Foresight

Climate University courses, TAMK Master's courses, Campus online courses, Courses from and with international partners, Collaboration with TaU

A free choice course

Risk Management and Circular Economy #RiMCE

Master's thesis



Pedagogy

Model of OCL

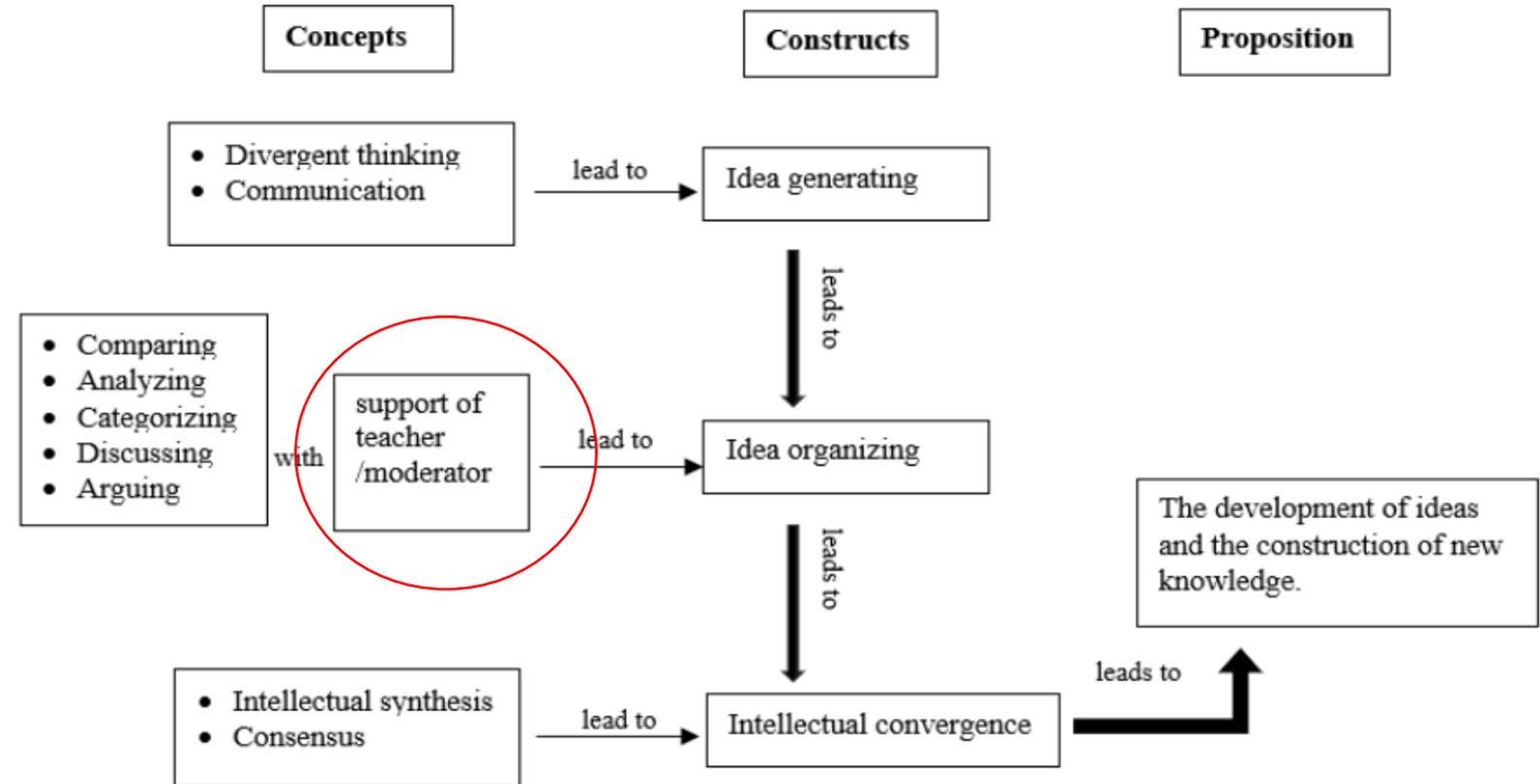
Collaborative learning

*Discussion and development actions around **circular economy** requires more **systemic perspective**. A paradigm shift is needed in the way **things and whole systems** are being designed. **Multidisciplinary** networks and **co-creation** are needed instead of silos.*

Do we really have collaborative learning as a cross-cutting pedagogical choice?

Figure 1 presents the process and relationship between concepts, constructs, and the proposition of OCL theory.

Figure 1
Model of Online Collaborative Learning Theory



[Online Collaborative Learning Theory – Theoretical Models for Teaching and Research \(wsu.edu\)](http://wsu.edu)



Leadership

Curriculum process

+++

- Feedback session with alumni
- A lot of discussions with TAMK experts, and with international partners
- TAMK curriculum process is complicated but supports the development
- Curriculum writing was open

- Lack of opportunities for team discussions and co-writing (because of limited resources)
- Lack of interest?

Towards systemic thinking as a learning outcome

We need shared understanding about **how pedagogical choices can advance learning systemic thinking in a program level**

How to motivate and commit teachers (resources are still lacking...) is a **leadership challenge**

Collaboration that provides **clear and specific goals** and **knowledge sharing** has the potential to greatly impact not only our processes of working together but also the products that are the results of that collaboration.

Leslie Rush in MELposium

First RiMCE Alumni meeting in April 2022

- Happy to connect with you in LinkedIn
- [Silja Kostia | LinkedIn](#)

