Curriculum development

Future-oriented development and practicing alignment

14.12.2022

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Curriculum development -course 2022-2023

Curriculum Development –course timeline

Session 1:
Wed 16.11.22
13.00-16.00
Otakaari 1, U261
Introduction to curriculum development

Session 2:
Wed 30.11.22
13.00-16.00
Otakaari 1, U261
Curriculum development process and practices

Session 3:
Wed 14.12.22
13.00-16.00
Otakaari 1, U261
Future-oriented development and practicing alignment

Session 4:
Wed 18.1.23
13.00-16.00
Väre, R107
Ryhmäopetus
Co-develop the curriculum

Session 5:
Wed 8.2.23
13.00-16.00
Väre, R107
Ryhmäopetus
Reflection of the course and long-term development

Pre-assignment → **Reading assignment** → **Choose the development project** → **Share your work and prepare to mentor peer group** → **Prepare presentation** → **Submit your report, DL 28.2.23**

Working with your team during the course

Intended learning outcomes and the main content of the course

After the course, you will be able to:

1. to discuss the different approaches of the curriculum in higher education
2. to identify the curriculum development process and practices and reflect on them in relation to their degree programme/major/minor
3. reflect the principles of constructive alignment in curriculum development
4. **identify and apply tools in curriculum development**
5. co-develop the curriculum together with the teaching team involved in the development
6. make a plan for continuous development

Our main topics in the course:

- Curriculum in higher education
- **Constructive alignment in curriculum development**
- **Assessment and development of the curriculum**
- **Co-development of the curriculum**
- **Tools for curriculum development**
- Continuous development

Today’s session

13:00–13:10	Agenda and schedule for today
13:10–13:30	Curriculum design operating model in more detail
13.30–13.40	Instructions concerning next time (mentoring)

BREAK 10 min.

13:50–15:00	Curriculum development exercises in mixed groups

BREAK 10 min.

15:10–15.50	Group work wrap-up
15.50–16:00	Conclusion of the day

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Curriculum design operating model

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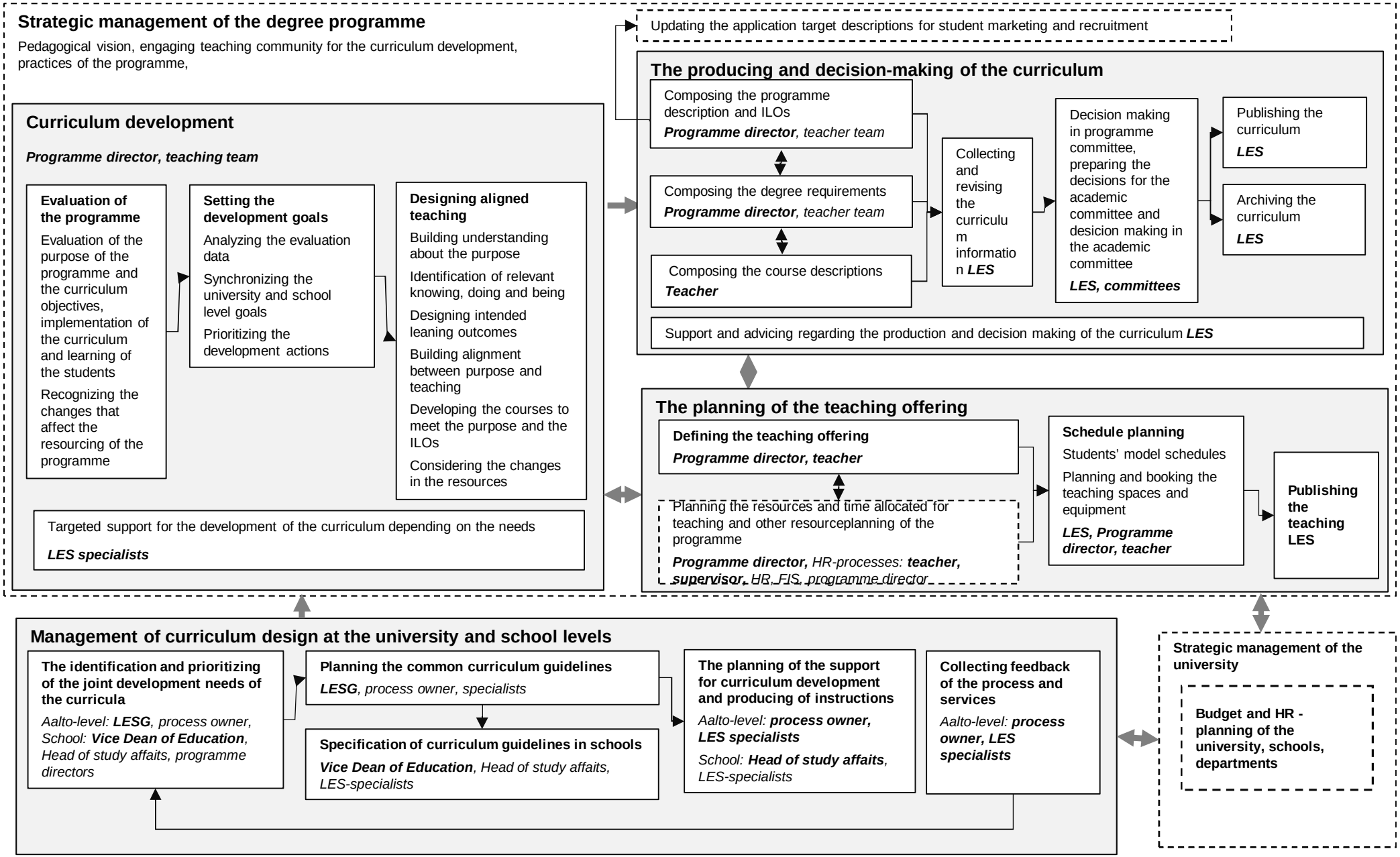
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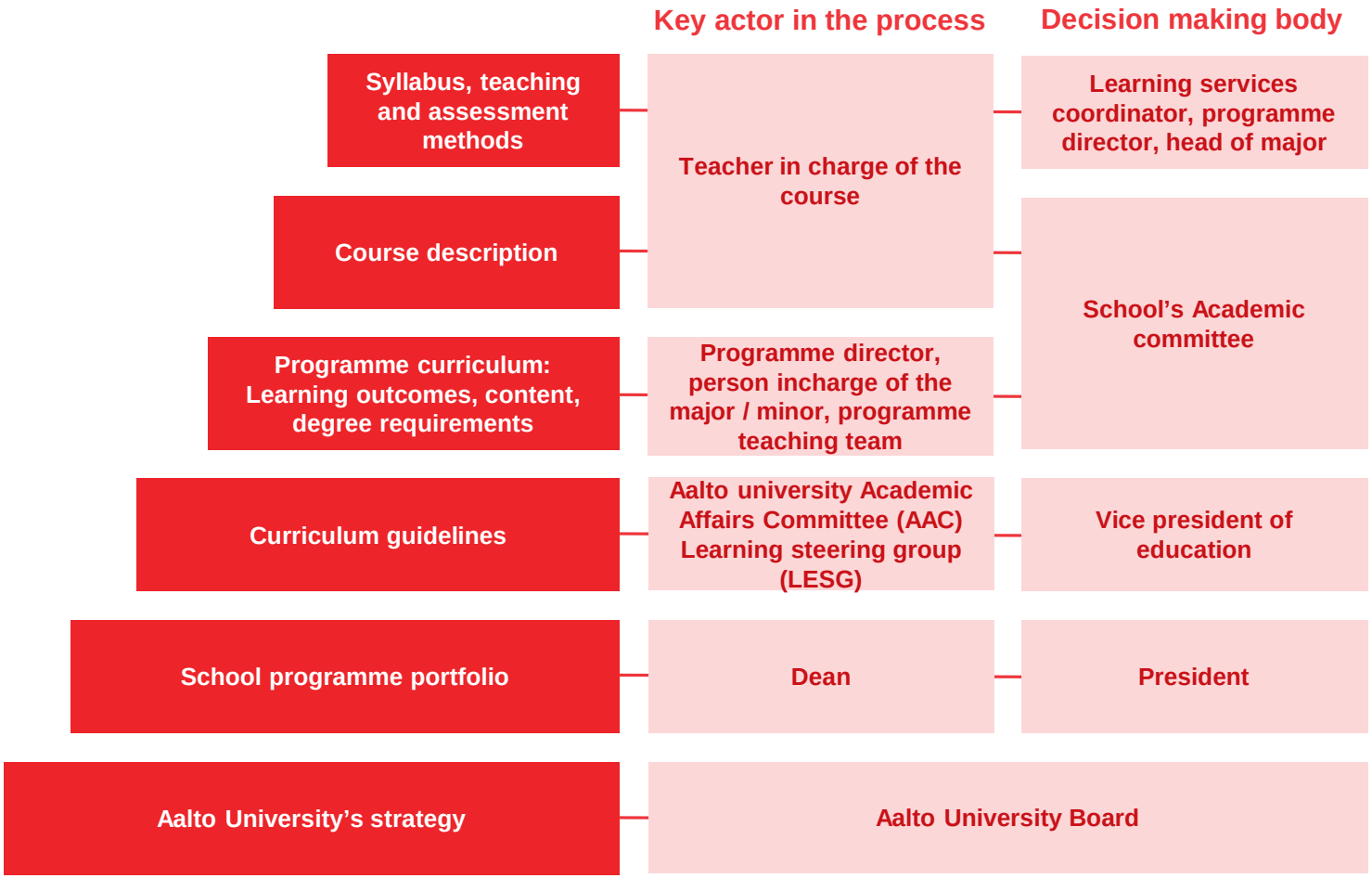
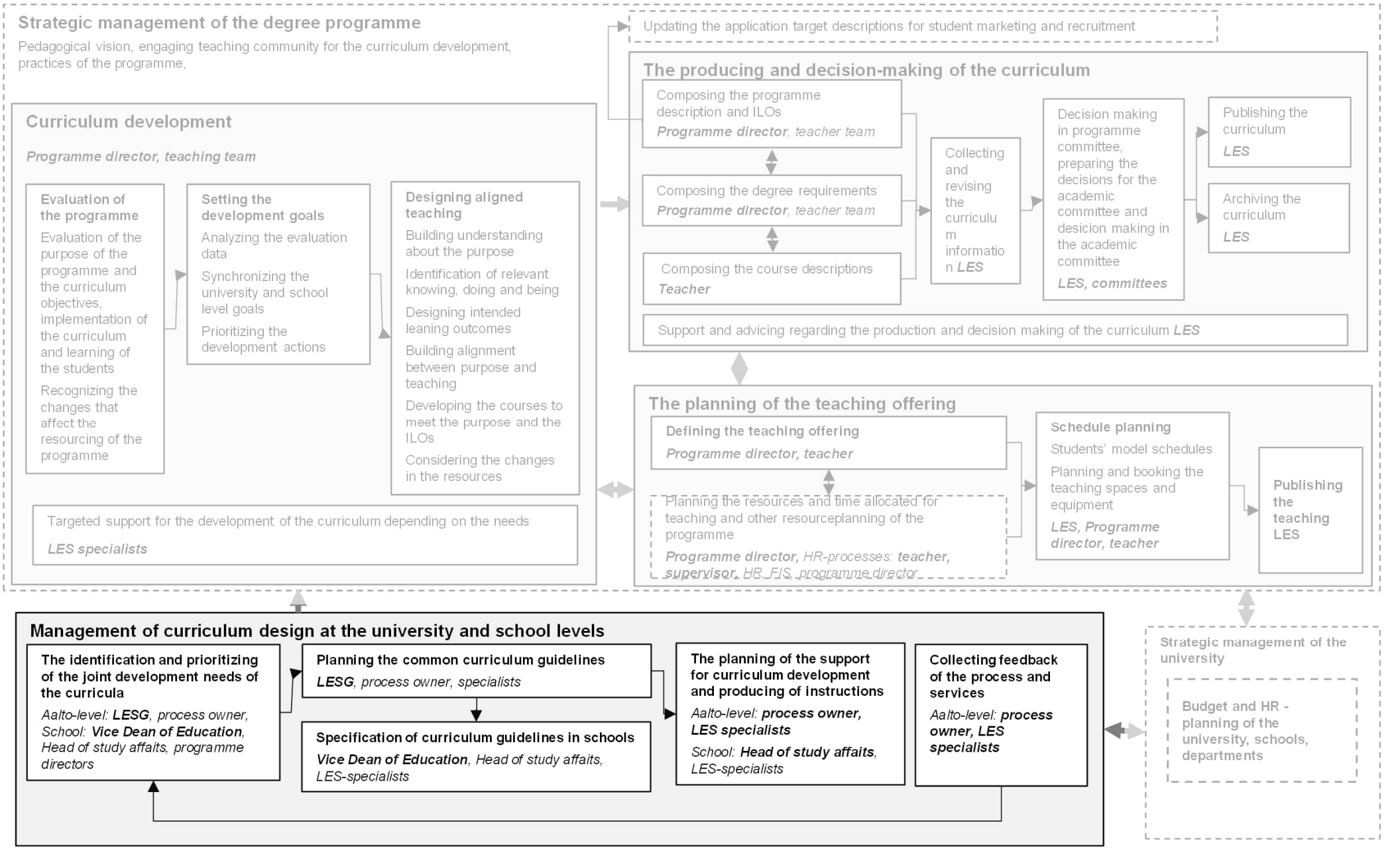
Key people in curriculum design

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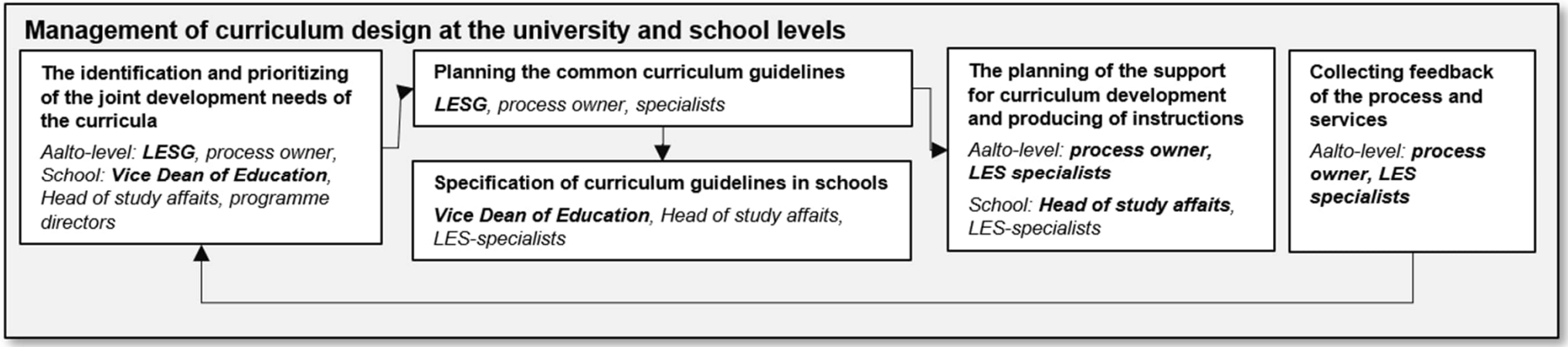
Management of curriculum design at the university and school levels



Aim: To develop a basis for well functioning curriculum process, including guiding policies, process and support

Curriculum guidance on different levels

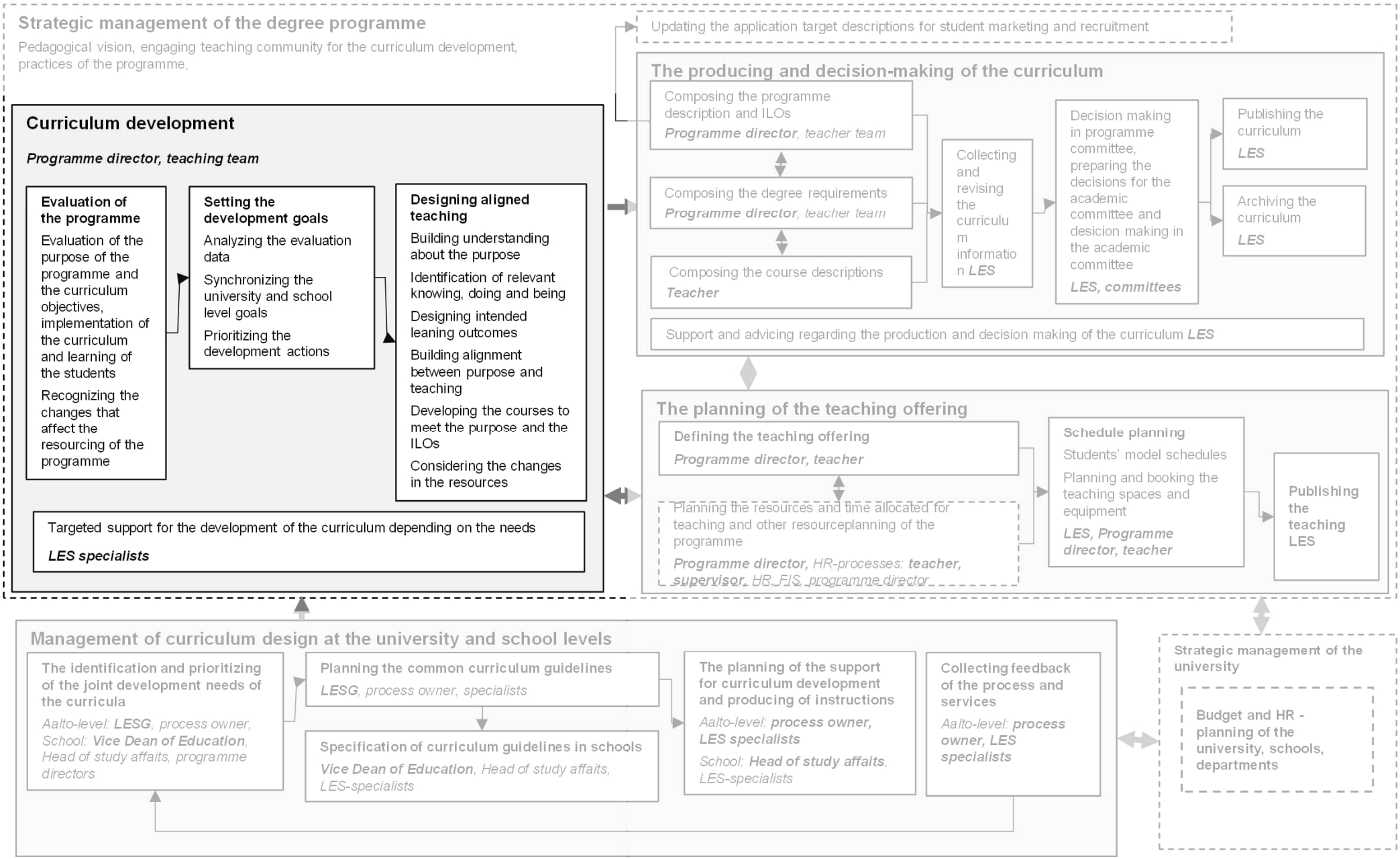
European Higher Education Area	Academic degree standards (EQF = European Qualification Framework), Bologna Process (Bologna declaration)
National level	Government Decree on University Degrees and Professional Specialisation Programmes
Aalto University level	Aalto University Degree Regulations, Strategy, Curriculum guidelines and instructions
Programme level	Programme curriculum: intended learning outcomes, Degree requirements
Course level	Course description

Curriculum guidelines

- **Guidelines for preparing the curricula 2024-2026 are currently being developed.**
- **At least goals regarding sustainability and life wide learning will remain similar**

Guidelines for the curricula 2022-2024

1. **The planning of teaching is competence-based.** The learning outcomes and contents of the programme as well as its methods for evaluating teaching and learning should form a cohesive, foreseeable whole from the student's point of view, thereby helping students to graduate within the normative timeframe.
2. **Adjusting degree programmes to respond to the challenges of the future.** Degree programmes should identify how their field relates to sustainability challenges and solutions, adjust the learning outcomes accordingly, and renew the contents of the programme in stages for curricula 2022–2024 and 2024–2026.
3. **Assessing and balancing study-related workload.** Degree programmes assess and develop the workload of the courses and the programme based on available feedback. In addition, programmes ensure that the content of the courses, the teaching methods, and the methods for evaluating teaching and learning support the completion of the learning outcomes within the target time.
4. **Identifying potential LWL teaching to offer.** As part of curriculum work, the schools and units are asked to identify potential LWL (life-wide learning) teaching that they can offer. Instructions how to identify LWL potential.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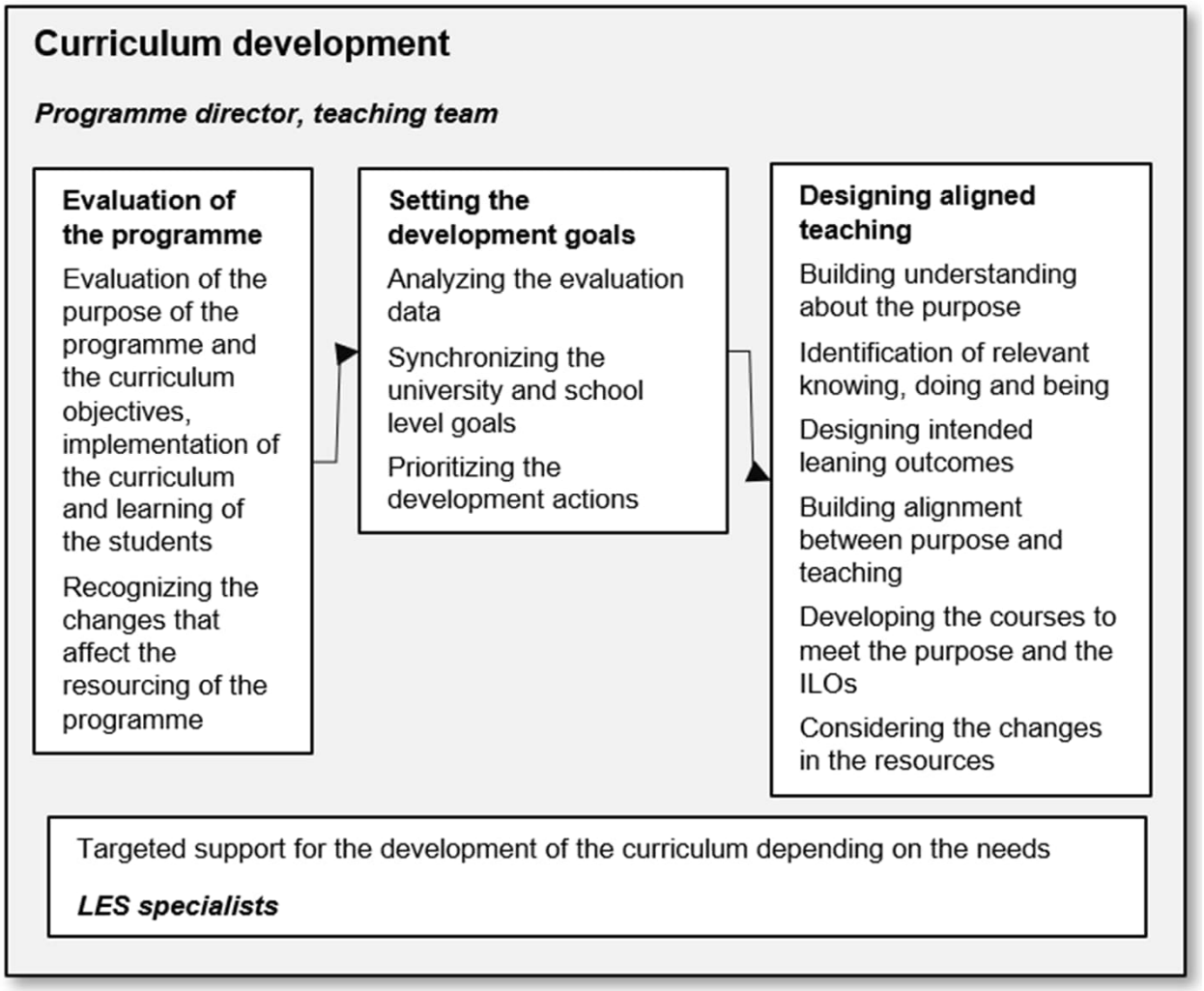
Curriculum development

Aim: To design an aligned curriculum that supports students' graduation in a target time



Curriculum development process

Setting the development goals

- Analysing the evaluation data
- Synchronising the university and school level goals
- Prioritizing the development actions

Designing aligned teaching

- Building understanding about the purpose
- Identification of relevant knowing, doing and being
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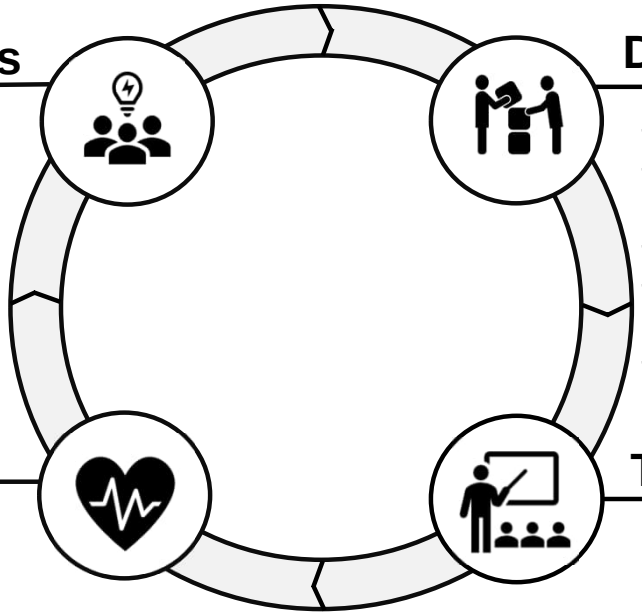

Evaluation of the programme

- Evaluation of the purpose of the programme and the curriculum objectives, implementation of the curriculum and learning of the students
- gathering views from the teachers, students and stakeholders

Teaching and learning

- Continuous evaluation throughout the course
- Collecting student feedback

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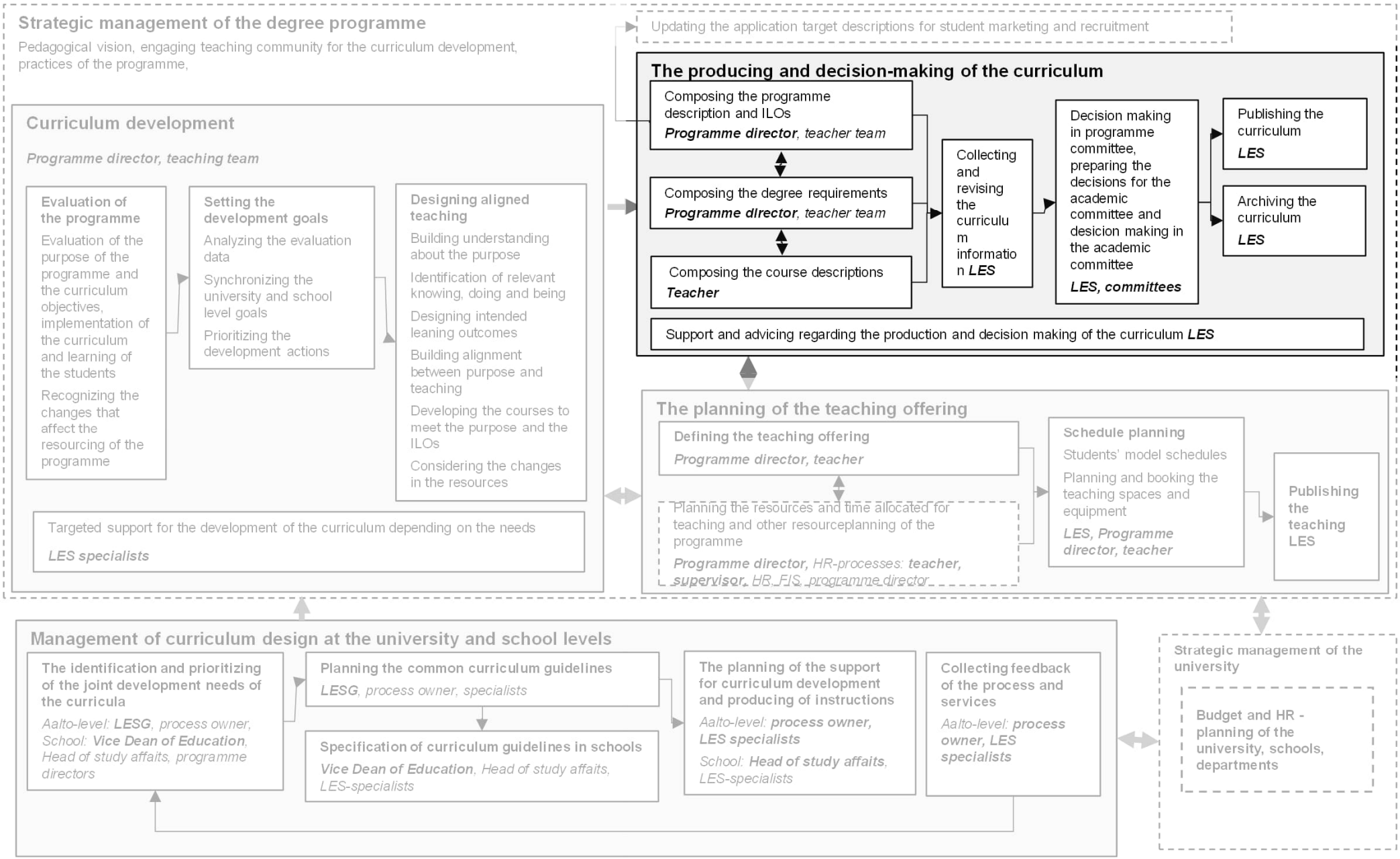
The development of teaching at the programme level is a cycle, where the developing of the new curriculum can begin straight after the previous curriculum has been accepted.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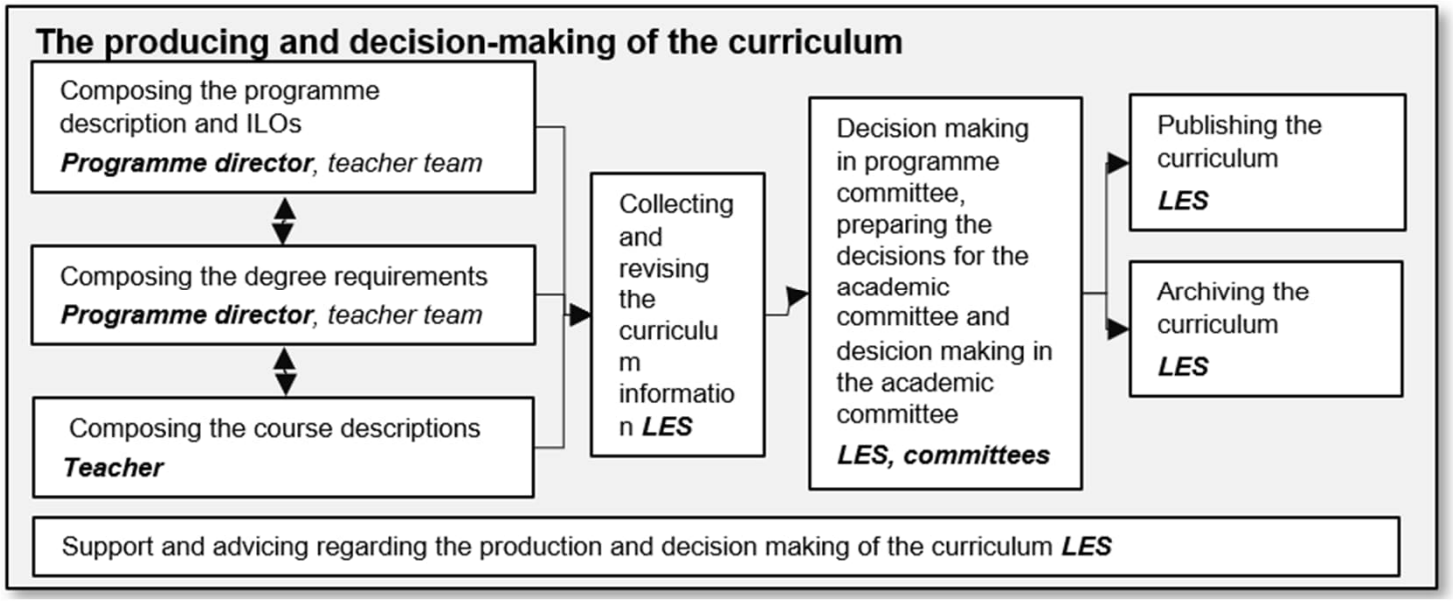
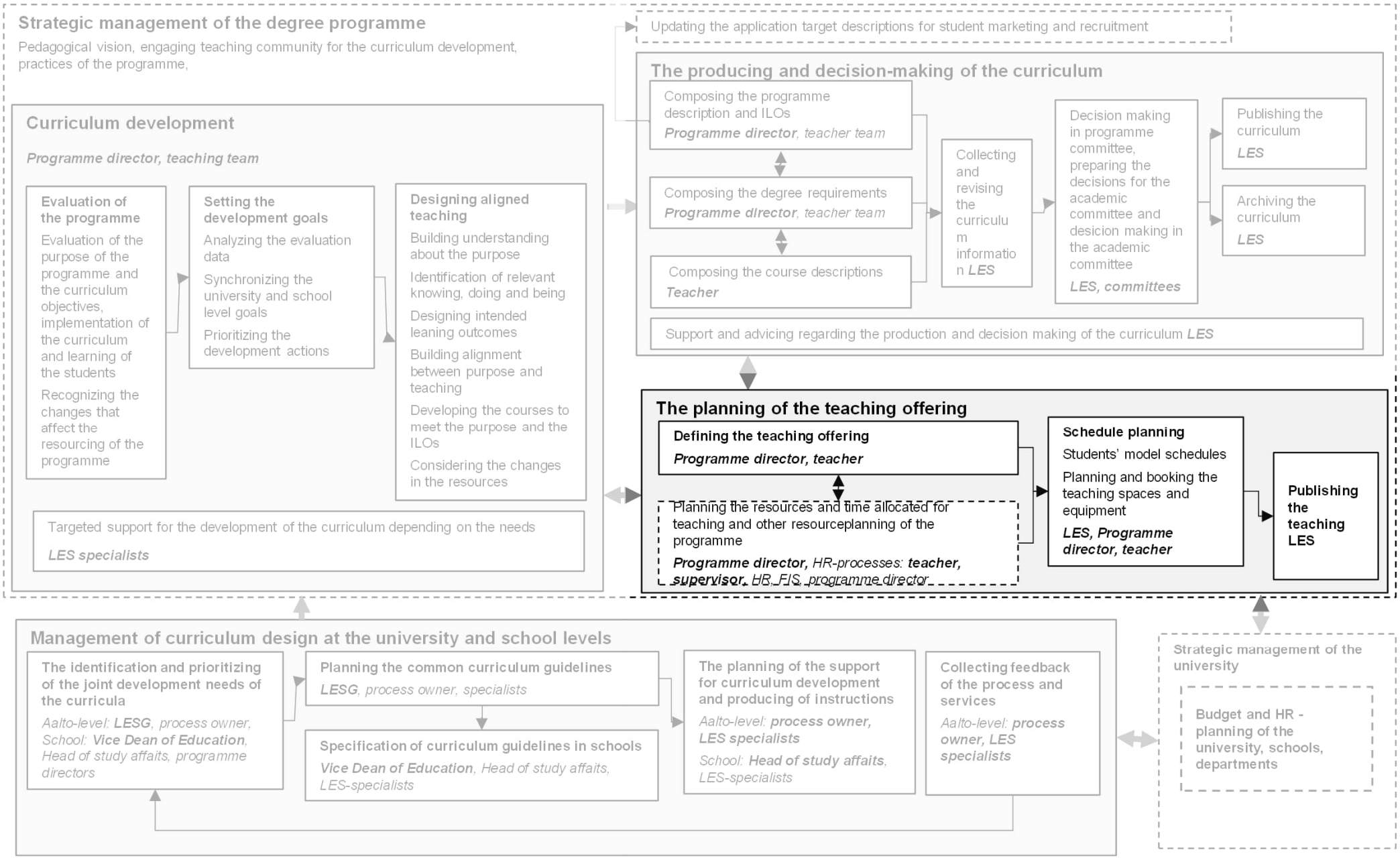
The producing and decision-making of the curriculum

Aim: To create the documentation of the curriculum and to publish it. To ensure that the curriculum fulfills the academic and administrative guidelines



Decision making:

The University Academic Affairs Committee (AAC) has delegated decision-making on all curricula (except for the Language Centre curriculum) to the academic committees of the schools. Hence, the School's academic committee confirmes the curricula for degree programmes.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Decision making process for the curriculum 2024-2026 (draft)

By the end of August 2023

Evaluation of the programmes and setting development targets

September – November 2023

Planning the degree requirements and minor offering

Planning the course portfolio

Publishing course and minor portfolios and limited LPM-information internally (December)

December 2023 – January 2024

Writing the course descriptions

Collecting wishes regarding course schedules

Revisions and finalising programmers' and minors' intended learning outcomes and degree requirements.

February 2024

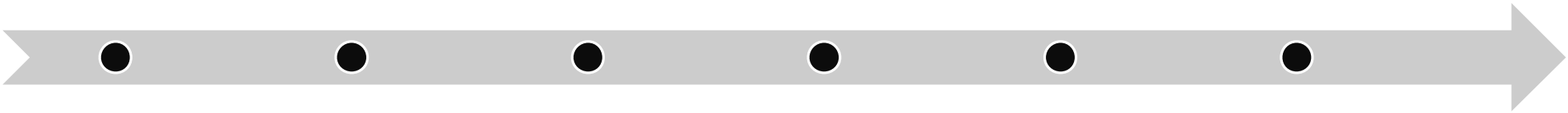
Revising and finalising course descriptions

March 2024

Confirmation of programmers' and minors' intended learning outcomes, degree requirements and course descriptions

April 2024

Publishing the Curriculum: programmers' and minors' intended learning outcomes, degree requirements and course descriptions



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Instructions concerning next session

Mentoring during 4th session

AIM of the mentoring:

- to coach the other team to move forward with their development project
- to get acquainted in a deeper level with other programme/major context
- share experiences with another team and build shared understanding of the topics and maybe brainstorm solutions as well

HOW to do it:

- **Share a link to your development project report to the mentoring team members by 11.1.23**
- Read the other team's report before the fourth session (18.1.23)
- **Note!**
  - The report or the project does not have to ready at this point; you talk about the current situation of the project with the mentoring team
  - the mentoring team will help you move forward by asking questions and discussing the topic (a list of possible questions will be provided by the teachers)

Mentoring pairs:

ACCOUNTING:
Derichs David
Beyer Bianca
Sormunen Nina

SCI:
Sarvas Risto
Lindqvist Janne

MGM STUDIES:
Kibler Ewald
Chliova Myrto
Galkina Tamara

AALTO VENTURES PROGRAMME:
Savage Paul
Kuikka Meri
Kaira Johannes
Lahdenne Simo
Hilavuo Sonja

USP:
Hewidy Hossam
Mady Christine

TAITE:
Lehtinen Sanna
Tervo Sakari
Ziegler Denise
Sini Vihma
Nurminen Marja

Timetable for the project

By 11.12.	**decide the development project topic**, write description and justification to the report and provide a link to the report for the teachers
14.12.	third session of the course, mentoring teams announced
By 11.1.	**send the link to your report for your mentoring team** (the report as it at this stage) and start preparing for mentoring (read the other groups report and make notes)
18.1.	fourth session of the course, team mentoring session (aim is to get support and ideas for others for the project)
18.1.-8.2.	**prepare presentation** of your project (report does not have to be ready yet)
8.2.	final session of the course, project presentations (report does not have to be ready yet)
28.2.	**submit your final report**

Let’s practice curriculum development: group work

Instructions for the group work

Aim:

- to practice curriculum development through a small exercise in mixed groups
- to familiarize with one aspect of the curriculum development cycle in a deeper level
- get acquainted with the material, support and tools available

Instructions:

- **Individually choose one** of six topics, that is most relevant/interesting for you and join that table
- **With your group:** in all exercises first **decide the context** of the exercise (ie. which curriculum or a module of studies you wish to work with), then proceed with the instructions
- **Time** for group work **55min.**
- **Wrap-up:** short presentation of the group work, **10min. per group**
    - **Aim of the wrap-up:** to **introduce** the method you tried to others and **analyse** when and how this way of working could be beneficial in curriculum work

Mixed group work topics

1. Setting the development goals • What are the internal and external demands that need to be considered when deciding about the development goals of the curriculum? • What needs to be done concretely to achieve the goals?	**2. Designing intended learning outcomes** • What does our purpose / educational goals mean as students' learning? • What should the graduate be able to know or do?	**3. Curriculum mapping** • How are current courses supporting student in achieving the intended learning outcomes? • How should the programme organize its courses in order to best support students learning?
4. Responding to the needs of the future: integrating sustainability • What changes in the society should we consider when developing our programme? • What knowing, acting and being do these changes require from our graduates?	**5. Data-assisted evaluation of the curriculum** • What needs to be evaluated? • What is relevant knowledge and data?	**6. Relationships and collaboration in curriculum development** • Who need to be involved in the development of the curriculum and how?

Instructions for each topic (1-6)

1

Setting the development goals

Aim:

- To synchronise the programme's internal development goals and the university-level strategic goals and make a development plan

Key questions:

- How can you synchronise the different demands that need to be considered when deciding about the development goals of the curriculum?
- What needs to be done concretely to achieve the goals?

First, discuss and identify the different internal and external demands or development goals there are for curriculum development at Aalto.

When identifying the needs, you can utilize the evaluations made during the sessions 1 (curriculum contents) and 2 (co-development, process). The joint university-level needs can be found from aalto.fi.

Choose 1 internal need (programme's own need) and 1 external need (strategic goal) for your development.

Formulate development goals of the two chosen needs and plan what needs to be done in order to reach the development goals (concrete tasks, responsibilities, follow-up).

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Setting the development goals

Demands for university education		Choose one of the needs for this exercise
What kind of internal needs (programme's own needs) for development you can identify?	Here you can list the identified internal needs	
What kind of university-level strategic goals you can identify?	Here you can list the identified strategic goals	

Plan for development: template for the group

Development needs	Development goals: the aim is to…	Concrete task: how to do it?	Responsible actor: who?	Target schedule: when?	Follow-up
Internal need:	1.				
	2.				
	3.				
External need:	1.				
	2.				
	3.				

Useful links

- **Aalto University Strategy:**
  - **Our strategy**
  - **Our plan**
- **The guidelines for curricula 2022-2024 | Aalto University**
- **Programme Director’s Handbook: Evaluation of achieved learning outcomes and the current state of teaching**

Instructions for wrap-up

Aim of the wrap-up:

- **to introduce the method** you tried to others and analyse and **“teach” others** when and how this way of working could be beneficial in curriculum work

How:

1. Briefly describe to others **the aim of the exercise** you did with your group and **how did you do it**
2. **Share your reflections about the exercise:**
   How did it go? Was there something new / surprising / not working / especially useful?

2

Intended Learning Outcomes

Aim:

- To formulate curriculum-level intended learning outcomes

Key questions:

- What does our purpose / educational goals mean as students' learning?
- What should the graduate be able to know or do?

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Choose one curriculum or module of studies you wish to concentrate on.

Based on the existing purpose and objective of the curriculum, recognize 1-3 things in the three curricular domains (knowing, acting, being)

Then, design 1-3 intended learning outcomes for the studies: you can utilize the tools provided (Bloom's taxonomy, instructions for designing ILO's)

Designing intended learning outcomes: template for group

Aim and objective of the curriculum	
AIM / PURPOSE	GOAL / OBJECTIVE
Broad general statement of the teaching intention	Specific statement of the teaching intention: what is hoped to be achieved

Curricular domains		
Knowing	**Acting**	**Being**
Core knowledge of the discipline	Skills and actions to be acquired	Student's personality and identity

Designing intended learning outcomes: template for the group

Here you can design the new intended learning outcomes.

Example: Our graduate is able to identify the societal context relevant to the water and environment and comprehend the different scales and key drivers applicable to water and environmental engineering.

After completing the programme, the graduate is able to			
example	*identify*	*the societal context*	*relevant to the water and environment*
ILO 1	verb	desired learning*	context
ILO 2	verb	desired learning*	context
ILO 3	verb	desired learning*	context

*Desired learning: knowledge, skills, attitudes / knowing, acting, being / content

Designing intended learning outcomes: tools, support

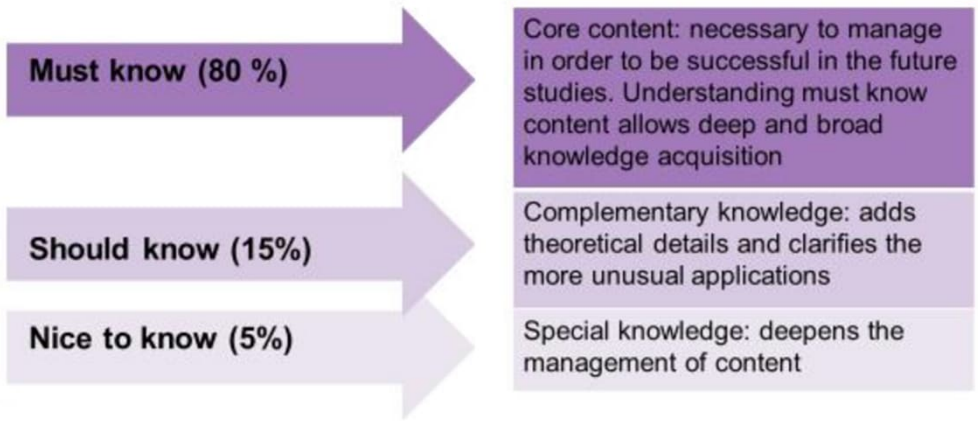
- Programme Director's Handbook:
  - **Instructions on how to design intended learning outcomes**
    - **at the programme level**
    - **At the course level**

- **Bloom's Taxonomy** (next slide) in: **Writing and using learning outcomes: a practical guide** (Hyland & Kennedy 2007) and Biggs & Tang 2007: Teaching for Quality Learning at University

- **Core content analysis** (next slide): Levander, L. & Mikkola, M. (2009). Core Curriculum Analysis: A Tool for Educational Design, The Journal of Agricultural Education and Extension, 15:3, 275-286. DOI: 10.1080/13892240903069785. Link to article

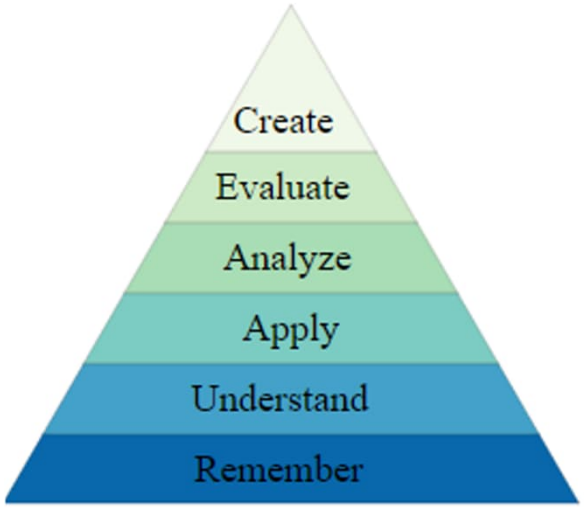
Core content analysis

For identifying the core content, complementary knowledge and special knowledge in the curriculum or a course.



Bloom's taxonomy

For classifying of learning objectives into levels of complexity and specificity.



Review, interpret, justify, predict
Categorise, generalise, to lead, plan, prepare, propose
Analyse, organise, calculate, categorise, classify, compare, merge, criticise, try
Apply, select, add to, build, develop, produce, utilise
Change, classify, defend, distinguish, discuss, explain, generalise
Describe, locate, identify, list, remember, name

A?

Picture: Wikipedia Commons

Instructions for wrap-up

Aim of the wrap-up:

- **to introduce the method** you tried to others and analyse and **“teach” others** when and how this way of working could be beneficial in curriculum work

How:

1. Briefly describe to others **the aim of the exercise** you did with your group and **how did you do it**
2. **Share your reflections about the exercise:**
   How did it go? Was there something new / surprising / not working / especially useful?

3 Curriculum mapping

Aim:

- to assess programme alignment regarding intended learning outcomes and other selected topics and identify possibilities to improve alignment

Key questions:

- How are current courses supporting student in achieving the intended learning outcomes?
- How should the programme organize its courses in order to best support students learning?

Select the approach (which topics you wish to review) for curriculum mapping, e.g., intended learning outcomes, contents, teaching methods, or specific skills, like teamwork skills or sustainability.

Fill in the curriculum map: issues to be mapped on the rows, courses on the columns.

In the exercise you can concentrate on 1-2 issues

Identify (in a dialogue with your teaching team), how students learn the issues throughout the courses. You can evaluate the current state or ideate development possibilities.

Remember to discuss the alignment with the teaching community and update the curriculum map regularly!

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What can curriculum mapping be used for?

We can map different things…

- **Programme ILO's**
- **Programme contents**
- **Particular themes e.g., sustainability**
- **Teaching methods**
- **Workload**
- **…**

…and from different directions

Building alignment

- *How do courses match with renewed programme ILOs?*
- *Are the courses organized so that students can build upon what they have learnt on previous courses?*
- *How can we balance the workload throughout the studies?*

Ensuring the alignment when making updates

- *When making changes, how are the programme ILOs and courses aligned?*

Tracing hidden elements

- *What kind of sustainability related topics are we currently teaching?*

Mapping the future potential

- *Which courses could contribute to sustainability related ILOs?*

Conducting a curriculum mapping exercise

When planning a curriculum mapping exercise you can utilize the instructions in Programme director’s handbook: **Curriculum mapping**

The page includes **1) instructions, 2) a template for curriculum mapping and 3) a workshop template**

Template A (for developing alignment)

Instructions: Fill in the intended learning outcomes (ILO) and courses. Map each course to the ILOs
Individually: write, how does your course contribute to each of the ILOs. Collectively: Regarding each ILO, what is expected from students when they come to the course. What do they know after the course?

ILOs	**Courses**														
	Course 1	Course 2	Course 3	Course 4	Course 5	Course 6	Course 7	Course 8	Course 9	Course 10	Course 11	Course 12	Course 13	Course 14	Course 15
ILO 1															
ILO 2															
ILO 3															
ILO 4															
ILO 5															
ILO 6															
ILO 7															
ILO 8															

Template B: (for communicating the alignment)

Instructions: Fill in the intended learning outcomes (ILO) and courses. Map each course to the ILOs 1= this ILO is a minor part of this course 2= This course supports the fulfillment of this learning outcome 3= this ILO is a central element of this course

ILOs	**Courses**														
	Course 1	Course 2	Course 3	Course 4	Course 5	Course 6	Course 7	Course 8	Course 9	Course 10	Course 11	Course 12	Course 13	Course 14	Course 15
ILO 1															
ILO 2															
ILO 3															
ILO 4															
ILO 5															
ILO 6															
ILO 7															
ILO 8															

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4

Responding to the needs of the future

Aim:

- To ensure that the programme has a broadly considered view on the societal needs and opportunities of the programme

Key questions:

- What changes in the society should we consider when developing our programme?
- What knowing, acting and being do these changes require from our graduates?

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What's the future we envision?

Identify, what are the key changes happening in the society. *E.g. megatrends or sustainability challenges*

What is our role in the society?

Create an understanding how these changes and challenges are connected to the field and programme? What is our responsibility as educators in higher education?

What knowing, acting and being do these challenges require?

Identify relevant knowing, acting and being related to understanding the challenges and creating solutions to them.

What are our actions?

Where can we start, what can we implement now? What should we strive for, what is needed in order to achieve our goals?

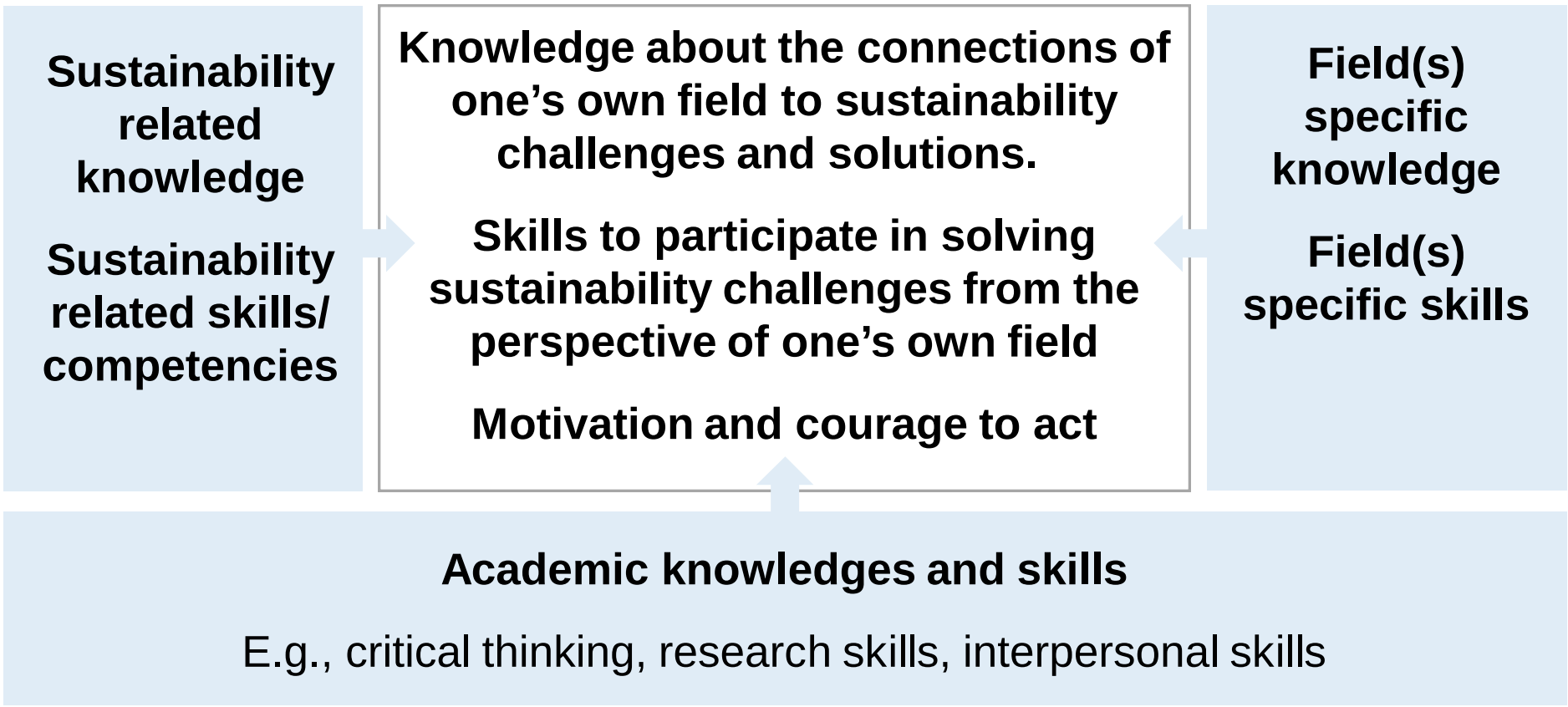
Questions and supportive material

	What's the future we envision?	What is our role in the society?	What knowing, acting and being do these challenges require?	What are our actions?
Questions	How does the future look like? What kind of futures are desireable?	What kind of expectations do our stakeholders have towards us? What kind of goals do we set for ourselves? What is our responsibility as educators in higher education?	What is the knowing, acting and being we want to foster? What is most important for the students to learn?	What changes are needed in our curriculum? Where can we start, what can we implement now? What should we strive for, what is needed in order to achieve our goals? What kind of barriers are there and how do we break them?
Supportive material	https://www.sitra.fi/en/topics/megatrends/		A framework for integrating sustainability into disciplinary curriculum (Slide 49)	

Notes

What's the future we envision?	What is our role in the society?	What knowing, acting and being do these challenges require?	What are our actions?

Goal: Graduates that are able to contribute to a more sustainable world



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5
Data-assisted evaluation

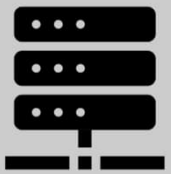
Aim:

- to conduct a critical analysis of the status of the curriculum and to identify best practices and potential challenges in the programme

Key questions:

- What needs to be evaluated?
- What is relevant knowledge and data?

First choose the relevant question (1-3) you wish to find answers to through evaluation. You can utilize the self-evaluation questions in identifying your question.



Then, identify the knowledge and data that is needed to perform an evaluation. Get acquainted with the material available in aalto.fi.

Finally, plan how and with whom you would perform the evaluation.

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Different aspects to evaluate	Spesific question (choose 1-3)	Knowledge needed	Data available	With whom and how
Programme purpose and aims				
The ability to reach potential students and secure commitment				
Quality of teaching and learning				
Competencies achieved by graduates and programme outcomes				

Support and tools available:

- When choosing the question you wish to work with, you can use the **Self-evaluation questions** provided in the Programme Director's Handbook.
- When defining the knowledge and data, you can use the material provided in Programme Director's Handbook: **Using data in the development of the programme**

Instructions for wrap-up

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   How did it go? Was there something new / surprising / not working / especially useful?

6 Relationships in curriculum development

Aim:

- To identify the critical partners in curriculum development

Key question:

- Who need to be involved in the development of the curriculum and how?

1. Choose a context (programme, major) for this task. Recognize the different roles that are involved in the curriculum development

2. Estimate the importance of this specific role / relationship

3. Define the goal of the relationship with each role

4. Describe the practices that are needed for this relationship to be productive and reach the goals that have been set

5. Think about what kind of support would be needed in order to maintain and develop the critical relationships?

6. Present your work to others

Analysis matrix of relationships

Relationship	Importance	Goal of cooperation	What are the practices needed to achieve the set goals for cooperation?	Support needed to maintain the relationships
Teacher 1	10			
Teacher 2	10			
Teacher 3	9			
Head of a Major	8			
Dep. head	9			
Planning officer	8			
Student rep	10			
Industry rep	7			
Alumni rep	6			

Instructions for wrap-up

Aim of the wrap-up:

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How:

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2. **Share your reflections about the exercise:**
   How did it go? Was there something new / surprising / not working / especially useful?

Group work wrap-up

Instructions for wrap-up

1. **Briefly describe the exercise you did with your group to others:**
   - What was the aim, what did you do?
2. **Share your reflections about the exercise:**
   - How did it go?
   - Was there something new / surprising / not working / especially useful?

10 minutes / group

Conclusion

Intended learning outcomes and the main content of the course

After the course, you will be able to:

1. to discuss the different approaches of the curriculum in higher education
2. to identify the curriculum development process and practices and reflect on them in relation to their degree programme/major/minor
3. reflect the principles of constructive alignment in curriculum development
4. **identify and apply tools in curriculum development**
5. co-develop the curriculum together with the teaching team involved in the development
6. make a plan for continuous development

What was the key takeaway for you of today's session?

Thank you and happy holidays!!!

Feedback for the third session:

https://presemo.aalto.fi/cdfeedback/

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