Meet the Dean

CHEM

June 2022

Aalto University
School of Chemical
Engineering

Programme portfolio renewal

Aalto University
School of Chemical
Engineering

Why?

- Increasing size of student cohorts affects the master programmes and majors in 2024. The resourcing (personell and space) must be well planned by that.
- Clearer portfolio and programme profiles and differentiation within the portfolio (conclusion from TEE 2020 evaluation)
- Need to use teaching resources more efficiently and scale up when possible the number of participants in courses. Teacher workload uneven.
- Role of minors in portfolio is unclear

Master´s programmes and majors

Master´s Programme in Chemical, Biochemical and Materials Engineering

Biomass Refining
Fibre and Polymer Engineering
Biotechnology
Chemistry
Functional Materials
Sustainable Metals Processing
Chemical and Process Engineering

Aalto Master´s

Life Science Technologies
Biosystems and Biomaterials Engineering

Advanced Energy Solutions
Industrial Energy Processes and Sustainability

International Design Business Management

Creative Sustainability (First admission 2020)

Master´s in international co-operation

European Mining, Minerals and Environmental Programme – EMMEP -> European Mining Course (EMC)

Energy Storage, EIT InnoEnergy Master School program

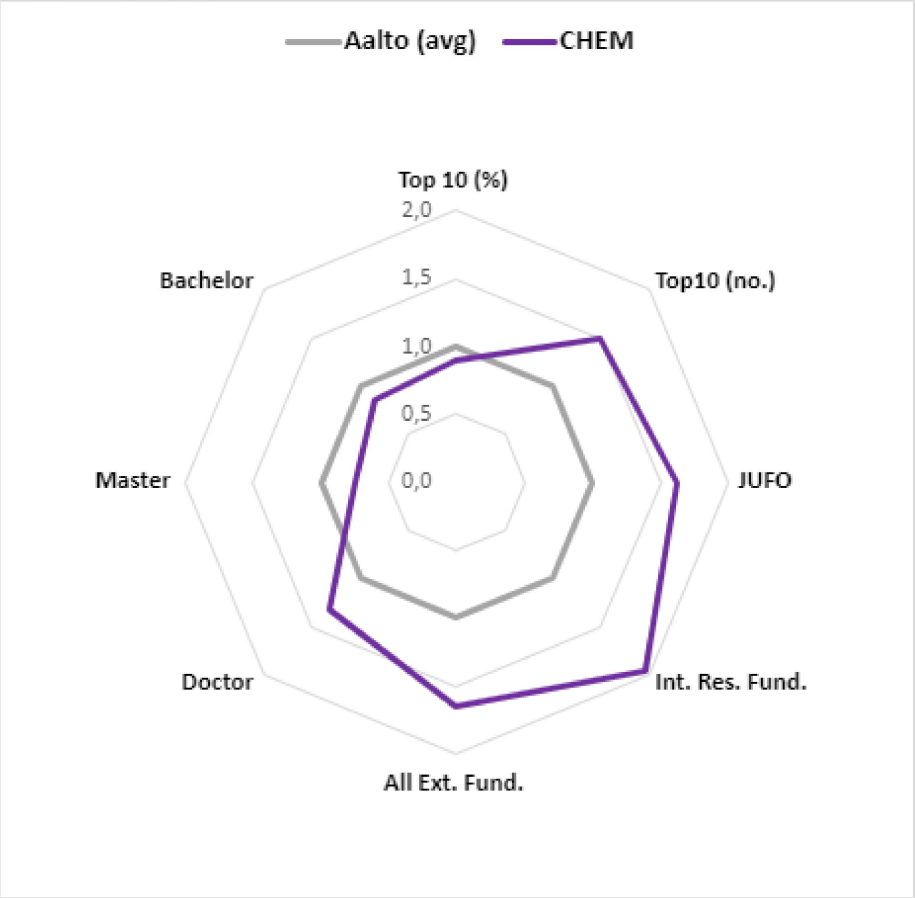
European Master in Biological and Chemical Engineering for Sustainable Bioeconomy – BIOCEB

Advanced Materials for Innovation and Sustainability (EIT Raw Materials) (AMIS)

Nordic Master in Polymer Technology (discontinuing)

Environomical Pathways for Sustainable Energy Systems – SELECT (discontinuing)

Motivation for portfolio renewal
Funding model



Master’s portfolio renewal goals

Applicants

Clear and attractive view for applicants to studies and future work opportunities

Number 1 choice in Chemical Engineering

Educational offering is understood nationally and internationally

Students

Clear and understandable study paths

Clear view and support on the employment opportunities

Flow of studies

Teachers

Workload

Synergy

Managing growing student numbers

More clear and transparent processes

Stakeholder

Future workers

Necessary skills, knowledge and competences

Educational offering is understood nationally and internationally

How?

- Research based approach and focus areas as background
- Incorporation & visibility of cross-cutting themes in education
- Evaluation of data on programme and major level (e.g. applicant numbers, student numbers, degrees, different feedback materials, credit points, number of courses, student-teacher-ratios, resourcing)
- Collaborations, discussions and workshops with teachers, students and stakeholders (employers and high schools)

CHEM responsibilities

Top responsibility Dean

Process responsibility VD

Programme director (Alex Frey) leading the discussions with the heads of majors and other programme directors (analysis of the current education offering)

Commitment of the department heads needs to be ensured.

Discussions: degree programme committee and academic committee of the school.

Final decisions: Degree programme committee presents to School academic committee.

LES: LES support for process at different phases of the project. Following annual clock. Law, guidelines, and other aspects that needs to be followed.

Open dialogue with the CHEM community (staff and students)

Framework for discussions

MSc study offerings:
CHEM own offerings
AALTO Joint offerings
International offerings

Biomass refining and advanced lignocellulosic materials

- Biomass refining
- Fiber and Polymer Engineering
- N5P in Polymer Technology
- Biological and Chemical Engineering for a Sustainable Bioeconomy (Bioceb)

Molecular bioscience and Industrial biotechnology

- Biotechnology
- Biosystems and Biomaterials engineering

Chemical engineering and circular processes

- Chemical and Process Engineering
- Sustainable Metals Processing
- Industrial Energy Processes (Advanced Energy solutions)
- European Mining, Minerals and Environmental Programme (EMMEP)

Chemistry for renewable energy and functional materials

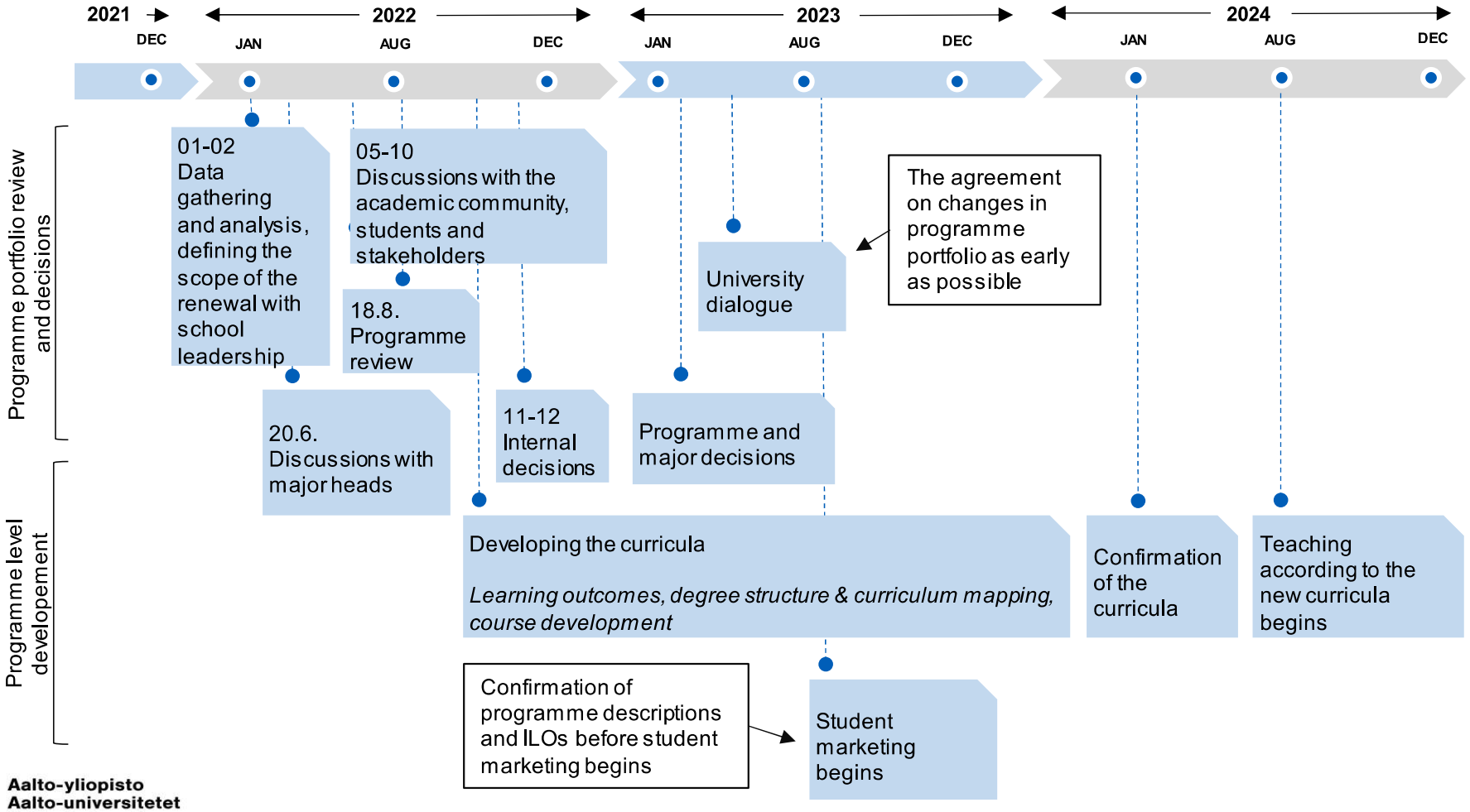
- Chemistry
- Functional Materials
- Advanced Materials for Innovation and Sustainability (AMIS)
- Master's Programme in Energy Storage

- International Design Business Management (IDBM) -> (includes compulsory CHEM minor)
- Creative Sustainability CHEM (connects to research focus area 1 & 3)
- Environomical Pathways for Sustainable Energy Systems (SELECT) -> selected courses from all study fields

Framework for discussion – students and resources

	MSc thesis / field	Professors	Lecturers
Biomass refining and advanced lignocellulosic materials	134	15	5
Molecular bioscience and Industrial biotechnology	92	7	2
Chemical engineering and circular processes	180	13	10
Chemistry for renewable energy and functional materials	75 MSc thesis / field: 2016-2021	12	7

Roadmap draft



Aalto-yliopisto
Aalto-universitetet
Aalto University

Topics in the University Dialogue discussion

1. Developing education at CHEM

- Increased intakes both for BSc and MSc programmes
- MSc portfolio renewal
- Using digital tools to improve scalability and reduce costs
- Balancing workloads in teaching
- Ensuring attractiveness of our programmes (marketing)
- Funding for education development and growth

2. How to ensure research and engineering excellence at the time when more resources are required for education development and the economic situation in school is alarming

- We have all the potential to grow e.g. Green Deal