

PRIMECH



PRogramme of Innovation in MECHanics education

PRIMECH vision and mission

Vision: *Ensure world-class quality of mechanics education at the Delft University of Technology.*

Mission: *Facilitate the development of shared mechanics teaching competence among TU Delft mechanics teachers.*

PRIMECH objectives



1. Sharing experiences, best practices and resources between mechanics teachers.



2. Facilitate discussions between teachers on what is good Mechanics education, innovative educational research outcomes, and methods.



3. Facilitate collaboration and co-development among mechanics teachers (of different courses, of different faculties).



4. Making mechanics education more recognized and rewarding for teachers.



5. Proactively supporting new mechanics teachers (new teachers, new to old course, new course).

'24/ '25 PRIMECH core team

Freek Pols
AS



Francesco Messali
CEG



Xuerui Wang
AE



Giuseppe Radaelli
ME



Iref Joeman
ME

PRIMECH community: main activities

Lunch Events:

Community Meetings
Guest Expert presentations

Dedicated MS Team

Newsletters

LinkedIn

Background

Status TU Delft Mechanics education before '21



There are more than 70 lecturers across TU Delft teaching courses related to mechanics.



Mechanics teachers are generally affiliated with the faculty in which they instruct, do not know other mechanics teachers from other faculties.



Mechanics teachers feel siloed and often "reinventing the wheel" (mechanics teaching competences and materials).

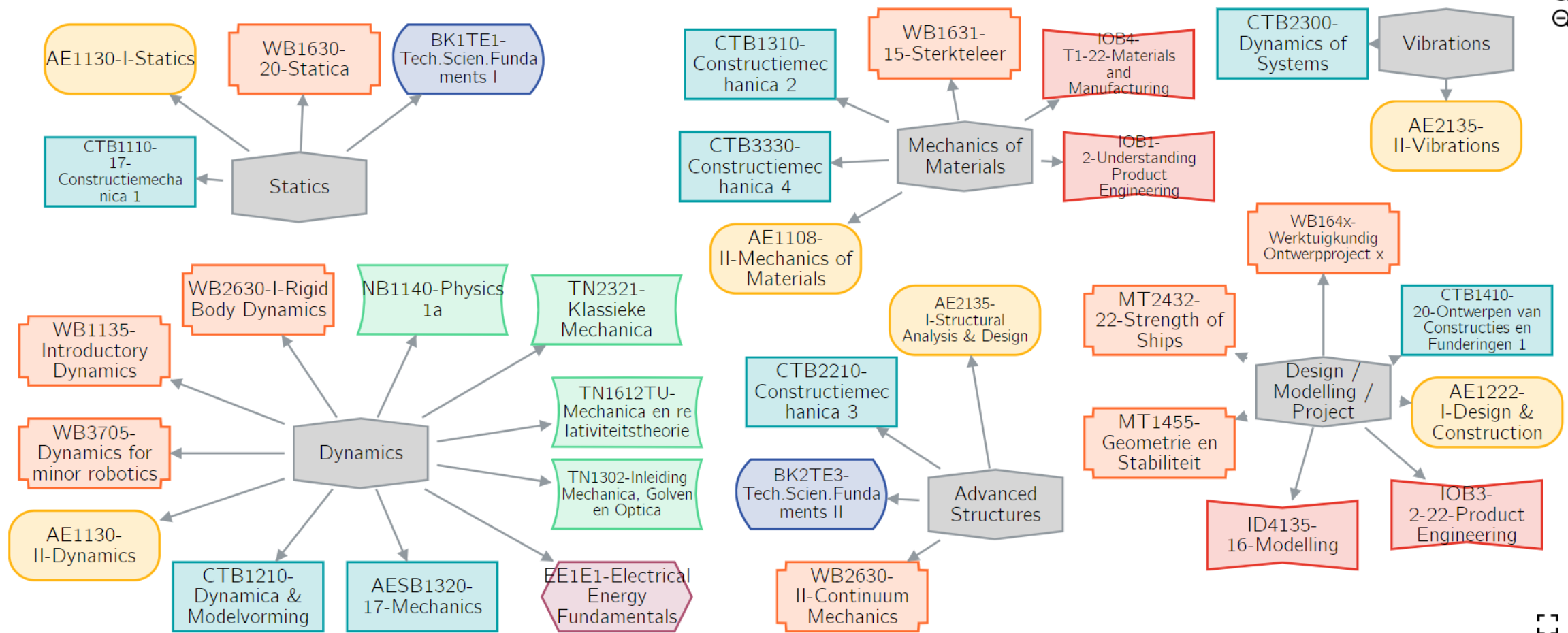


There is no reputational platform for mechanics teachers to display the work done.



Teachers have limited time to improve their material/courses, to actively build and maintain a mechanics teachers community.

Bachelor-level Mechanics courses @TU Delft



PRIMECH first phase (2021-2024)

- PRIMECH started building a Community of Practice (CoP) for mechanics teachers' community-based professional development in Oct '21

Domain

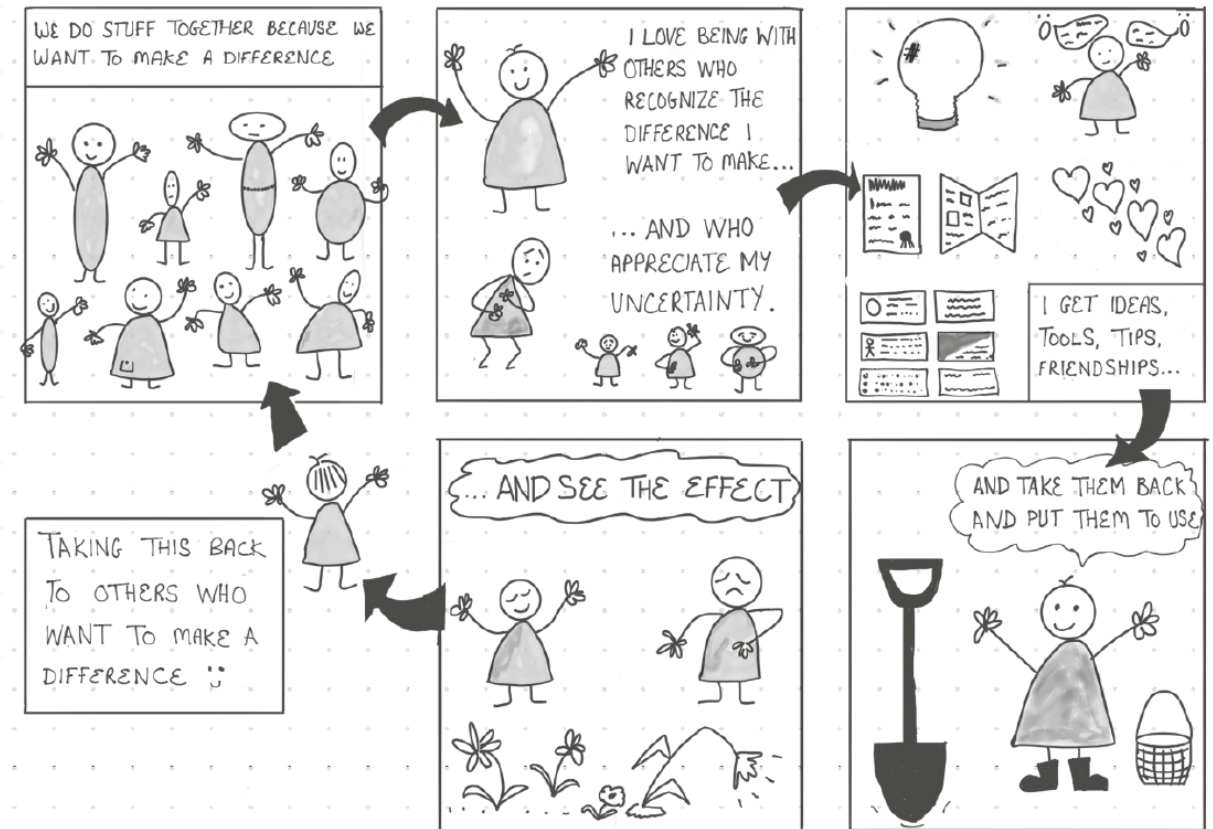
- Share an area of interest (i.e. teaching Mechanics)

Community

- Build a relationship through regular interaction

Practice

- Share, develop and maintain knowledge & tools to improve their professional practice



PRIMECH first phase (2021-2024)

Main objectives:

- > Find community members* (bottom-up approach = make PRIMECH existence known so interested TU Delft mech teachers can join the community).
- > Connect the mechanics lecturers between faculties.
- > Facilitate collaboration and development of shared mechanics teaching competence and teaching material.
- > Provide reputational platform (validation, recognition) for mechanics teachers.
- > Facilitate activation of members*.

*see community participation levels

Community participation levels

Core team – organize, charter, market, nurture, and operate the community.

Active – work closely with the core team to help shape the definition and direction of the CoP (i.e. defining the community's shared vision, purpose, roles, strategies for interaction, marketing, and communications).

Occasional – participate when specific topics of interest are addressed or when they have something to contribute to the group. They are often the largest group in the community.

Peripheral – feel a connection to the community but engage on a limited basis. These could be newcomers or old experts or those who have a more casual interest in community activities.

Transactional – least connected to the community and may connect only to access CoP resources or to provide a specific service (for example, website support).

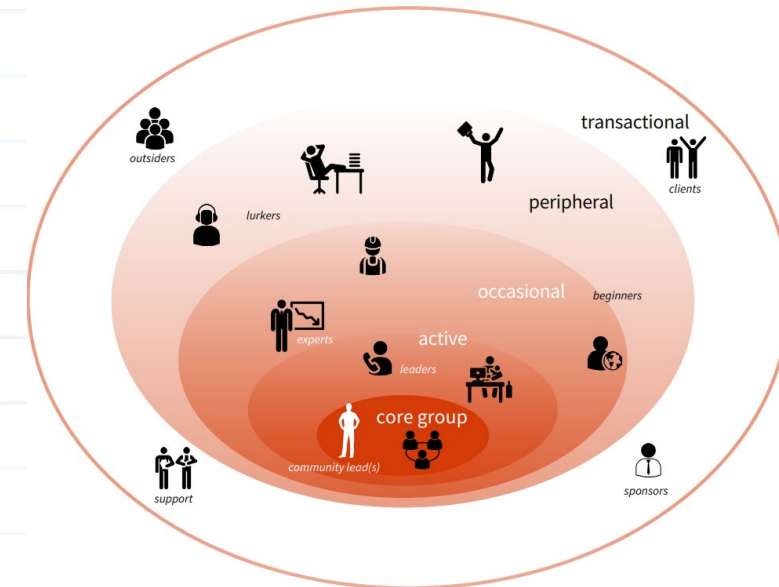


Figure 3.2
Different levels of participation in a community of practice

Ideal teachers' journey into PRIMECH

PRIMECH first phase (2021-2024)

TEACHERS:

DISCOVERY

Peripheral
member

Are aware of PRIMECH. Feel at ease to engage in discussions and events.

Recognize the value of being a part of the community, they gain:

A. Useful insights into teaching mechanics (best practices, material, ...)

COMPETENCE

Occasional
member

B. Connection (conversations, collaboration, codesign) between people and among faculties.

C. Validation and recognition (reputational platform).

RESPONSIBILITY

Active
member

Feel a sense of belonging, ownership, and proactiveness.

PRIMECH first phase (2021-2024)

Phase	Theme	Domain	Community	Practice
Potential	Discovering common ground	Seeing your real passion as a worthy domain	Finding enough potential members to imagine a community	Recognizing shared struggles and potential help
Coalescing	Finding value	Discovering how others experience the domain and what they need to learn	Getting to know each other	Helping each other, sharing stories and tips, solving problems
Establishing	Getting organized	Negotiating a shared learning agenda	Establishing a rhythm and a way of working, building relationships and trust	Finding activities that create the most learning value
Committing	Building an identity	Establishing the value of the domain in the world	Expanding the membership to include all concerned	Developing and pushing a communal regime of competence
Evolving	Taking stewardship	Achieving influence and recognition as the steward of the domain	Balancing intimacy and openness; welcoming newcomers	Renewing relevance; establishing standards, seeking innovations; advancing the practice to be world-class
Dispersing	Moving on	Responding to new circumstances	Keeping in touch	Leaving a legacy

Halfway this stage



<https://www.wenger-trayner.com/cop-guidebook/>

Figure 3.4
Developmental challenges typical of the evolution of communities of practice

PRIMECH first phase (2021-2024)

- > '21-'24 was initiation phase, and it was quite successful:
 - > All TU Delft mech teachers know about PRIMECH's existence.
 - > PRIMECH organized 15 events in 2 years with an average of 20 participants per event (much higher than similar events).
 - > PRIMECH started Accelerate to have more impact in the actual mechanics classrooms and completed 7 “accelerated” projects.
 - > Some teachers from different faculties started collaborating independently of PRIMECH (sharing ANS question banks, borrowing setups for in-class demonstrations, ...).
 - > Start creating a reputational platform for mechanics teachers to display the work done (events, newsletter, LinkedIn, ...).
 - > Connecting mech teachers with other relevant TU Delft non-mech projects and tools (PRIME and Math education, sustainability, digital tools, ...).
 - > Presented the process at an international conference.
- > All the outcomes can be found on [PRIMECH website](#).