

Leaders as change agents, does design thinking work in academia?



Co-creation of knowledge

Morten Brekke

Vice Rector for Education



51
MASTER'S
PROGRAMMES

46
BACHELOR'S
PROGRAMMES

34
ONE-YEAR
PROGRAMMES

15000
STUDENTS





Norway

Kristiansand

Grimstad

51
MASTER'S
PROGRAMMES

46
BACHELOR'S
PROGRAMMES

34
ONE-YEAR
PROGRAMMES

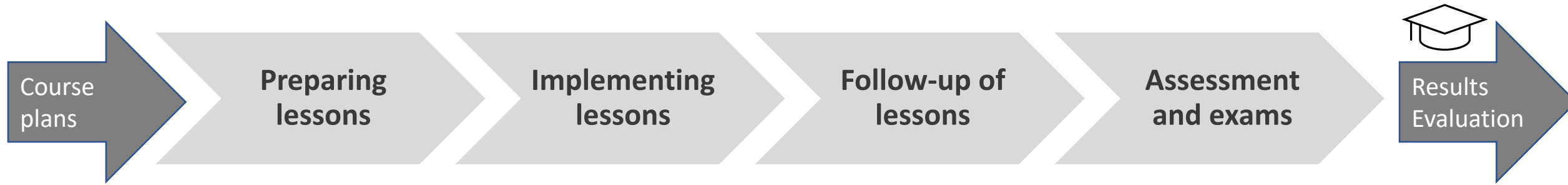
15000
STUDENTS

Challenges

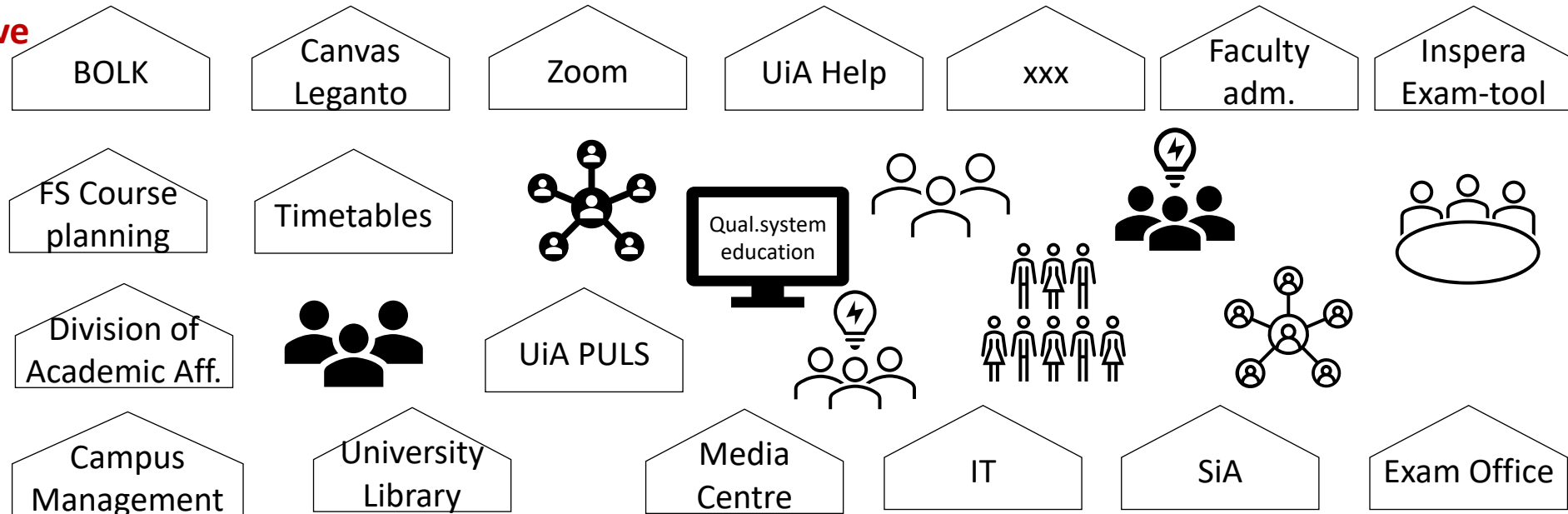
- How to develop and implement structured and systematic approaches to enhance learning and teaching.
- The “US” and “THEM”

Service development program

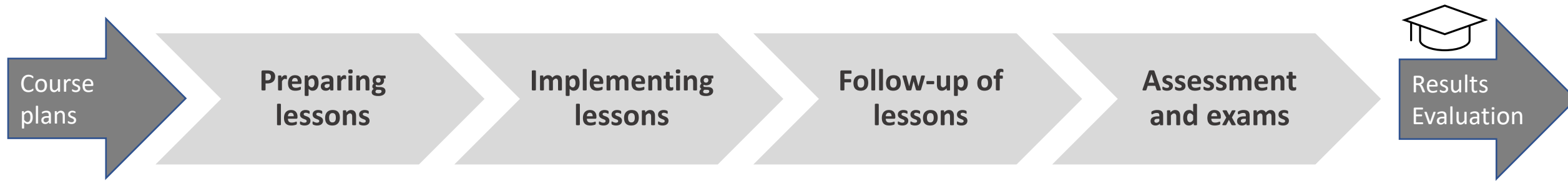
Example - the teaching process



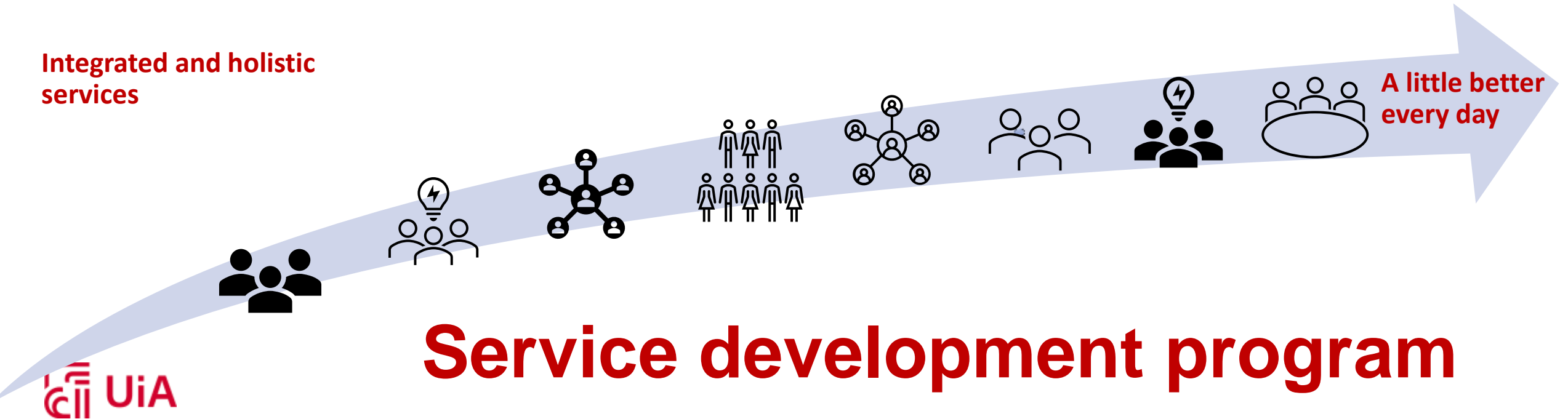
Administrative services



Integrated and holistic services (e.g. the teaching process)



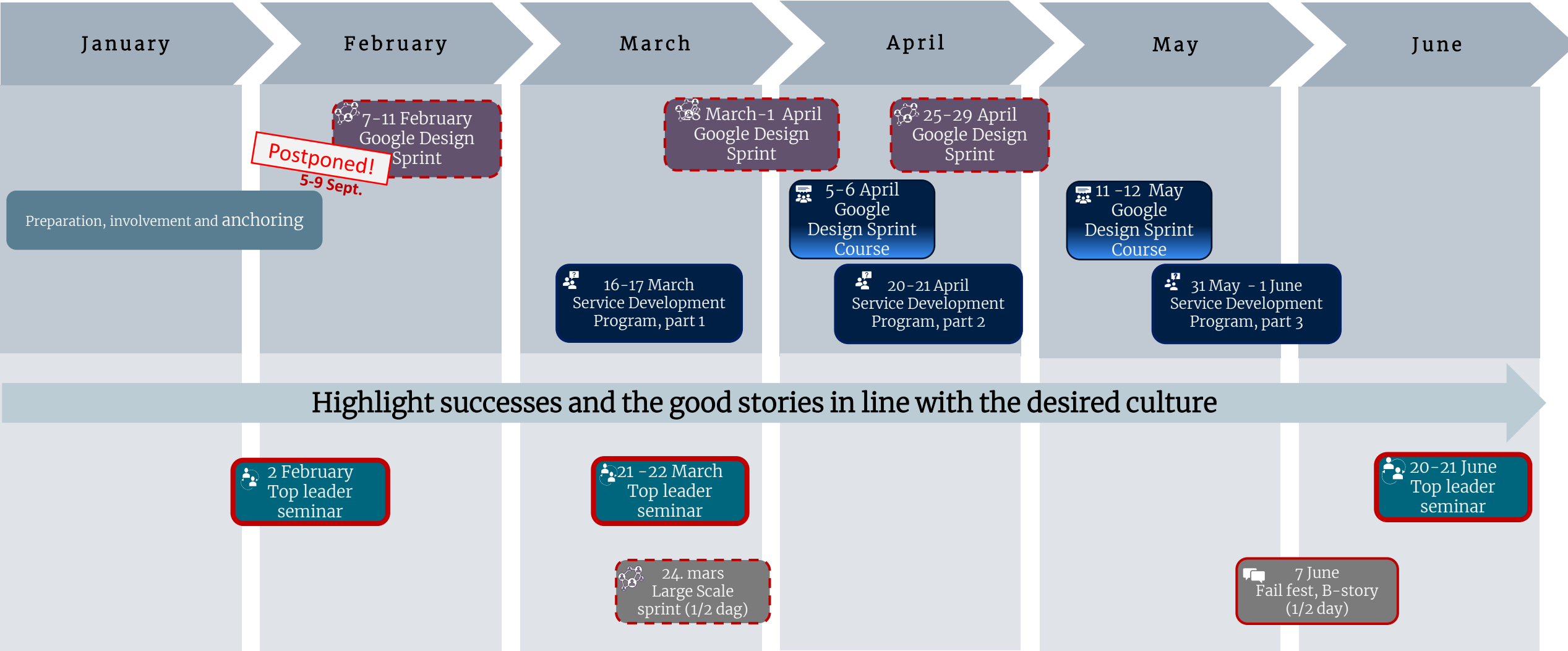
Integrated and holistic
services



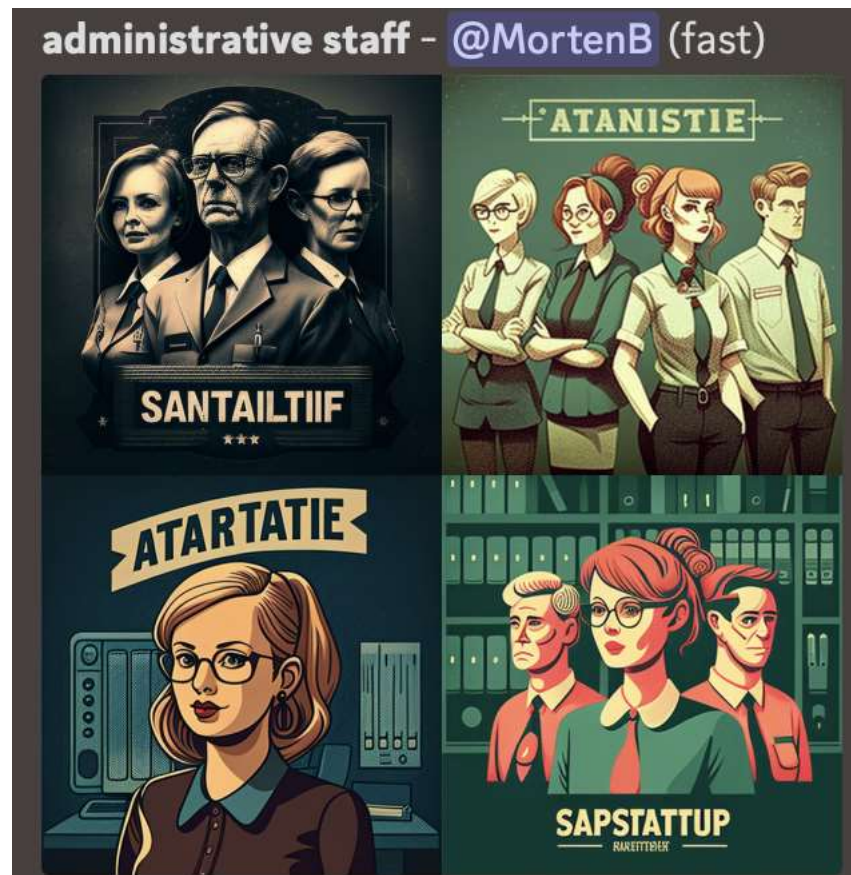
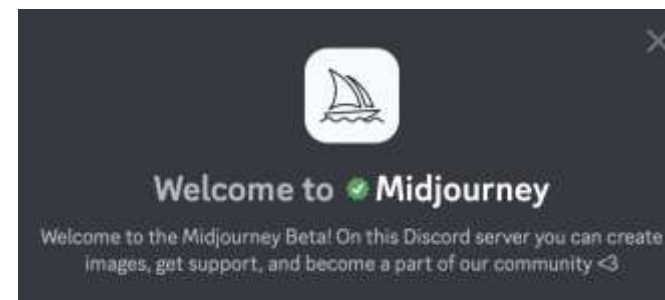
Service development programme, spring 2022

Leaders participate
on set dates

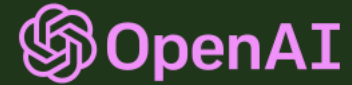
Adm. decision makers
participate
(depending on problem at hand)



The US and THEM



The US and THEM



MO

Give me five bullet points on how we solve issues between scientific staff and administrative staff at universities?



- **Improve communication** by encouraging open, transparent, and regular communication between all staff members.
- **Encourage collaboration** between scientific and administrative staff to build trust and understanding.
- **Provide training** to all staff members on roles, responsibilities, communication, and collaboration skills.
- Develop clear **policies and procedures** to minimize misunderstandings and reduce potential for conflict.
- Offer a neutral **third party or mediator** to help resolve complex issues.



Example: Using “force” - Design sprint

MA-178 Mathematics 1



Course for engineers
6 study programmes
300 - 400 students
2 teachers



Written examination
40% failure rate

The Dean:

“Either you're in or you're out”



Design sprint

Key questions:



How can we get our students to work on mathematics earlier in the semester?



Can a new form of assessment reduce the high failure rate?

Will this affect the quality of teaching?

Can we decide who does what?

Participants:

Academic staff

- Øystein Midttun
- Sverre Lunøe-Nielsen
- Thomas Gjesteland
- Arne Wiklund

Administrative staff

- Geir Kløkstad (SAK / Eng.Science)
- Linda G. Bø (exam office)
- Grethe Ø. Fossnes (exam office)
- Siren Vegusdal (Canvas)

Using “force”

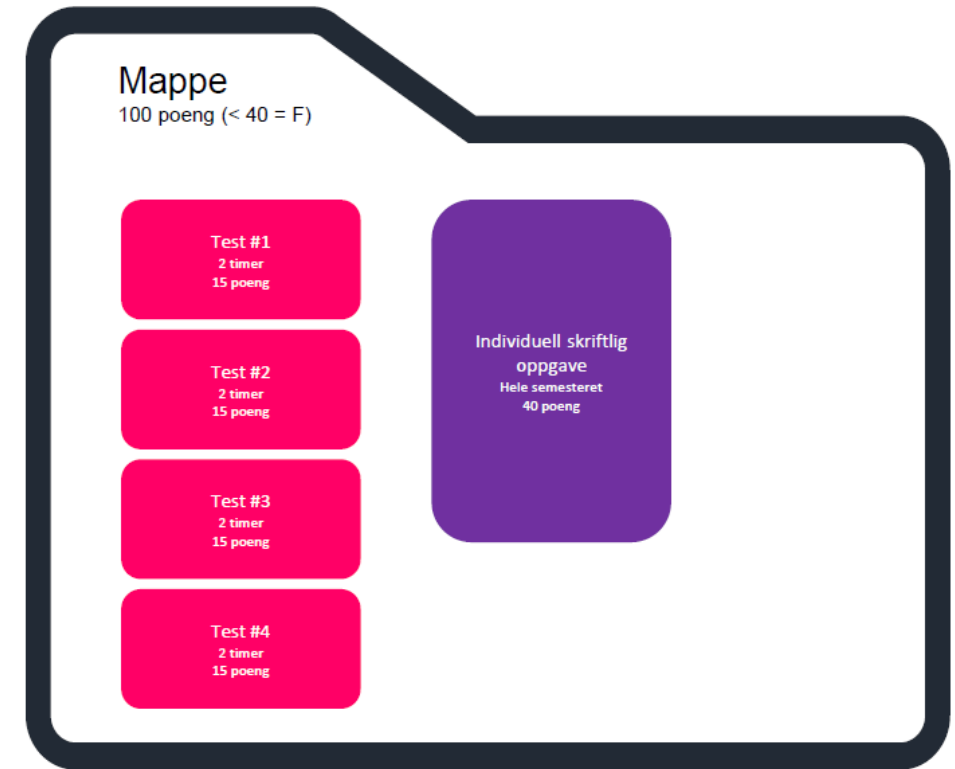
Results

- Agreement on a new form of assessment in MA-178.
- From written examination to portfolio assessment.

Folder contents:

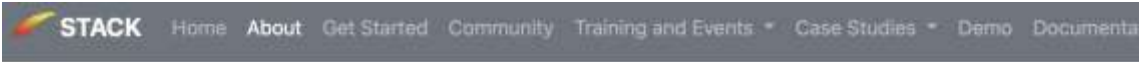
several

- 60% 4 individual digital tests, ~~unlimited~~ number of attempts within a set time period
- 40% Individual written exam



Digital testing:

Based on several projects within MatRIC



About STACK

<https://stack-assessment.org/>

STACK is an online assessment system for mathematics and STEM, designed to enable students to answer questions with mathematical expression, such as a polynomial.

Computer Algebra Support

STACK uses the Computer Algebra System Maxima to evaluate expressions.

- ✓ **Mathematical answers:** questions are not limited to multiple choice.
- ✓ **Randomise questions:** so different students see different variants of a quiz.
- ✓ **Graphical support:** make your questions stand out by integrating Maxima plots, JSXGraphs or Google Charts.

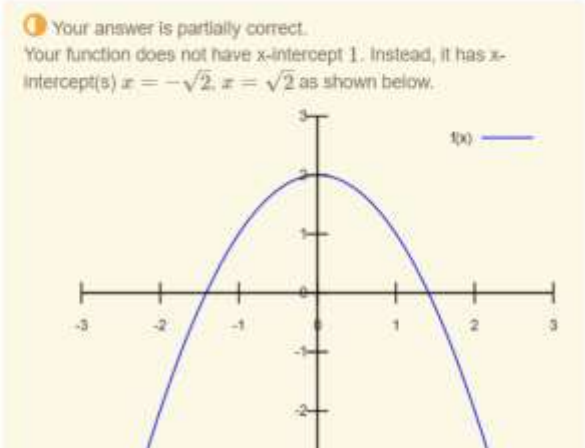
Validation of answers

Before answers are graded, students confirm their answer is interpreted correctly by the system. Invalid answers, like ones with mismatched brackets, are rejected.

- ✓ **Fair:** students are not penalised for poor computer skills.
- ✓ **Flexible:** the teacher decides what a valid answer looks like.

Give an example of a function with y-intercept 2 and x-intercept 1.

$f(x) =$

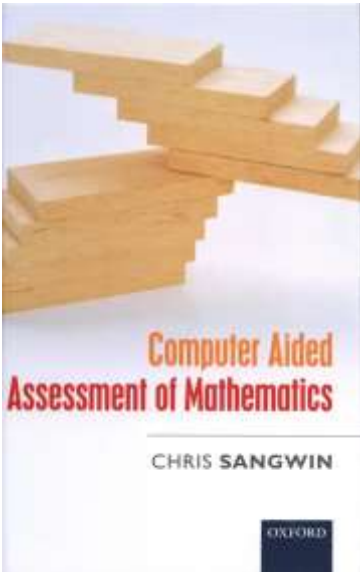


MatRIC Centre for Research,
Innovation and Coordination
of Mathematics Teaching



CENTRE FOR
EXCELLENCE
IN EDUCATION

<https://www.uia.no/en/centres-and-networks/matric>



Mappe

100 poeng (< 40 = F)

Test #1
1 time
15 poeng

Test #2
1 time
15 poeng

Test #3
1 time
15 poeng

Test #4
1 time
15 poeng

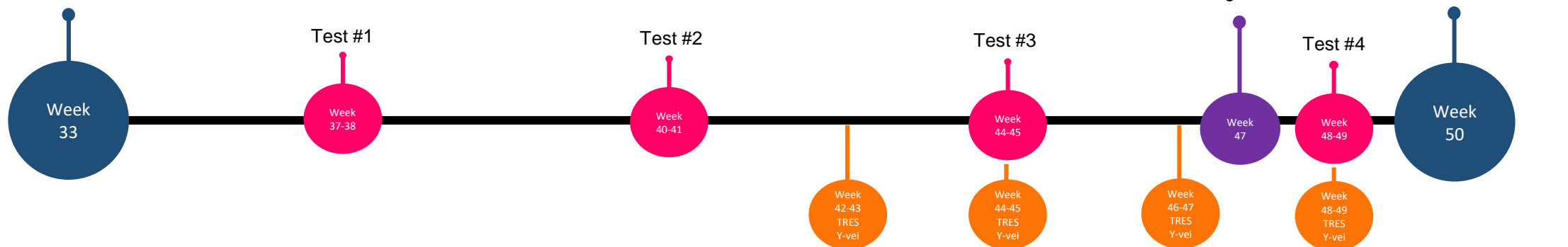
Individuell
skriftlig
oppgave
Hele semesteret
40 poeng

På forsøk #1 og forsøk #2 er det reservert plass til hver studieprogram. På disse to forsøkene trenger du ikke melde deg på. Du kan bare møte opp i C2 036.
Hvis du ønsker flere enn 2 forsøk, kan du melde deg på de åpnere forsøkene. Det er bare mulig å melde seg til et forsøk av gangen. Du velger selv hvilke tid og dag som passer best for deg.
Påmeldingen blir tilgjengelig i Canvas 24 timer før hver prøve.

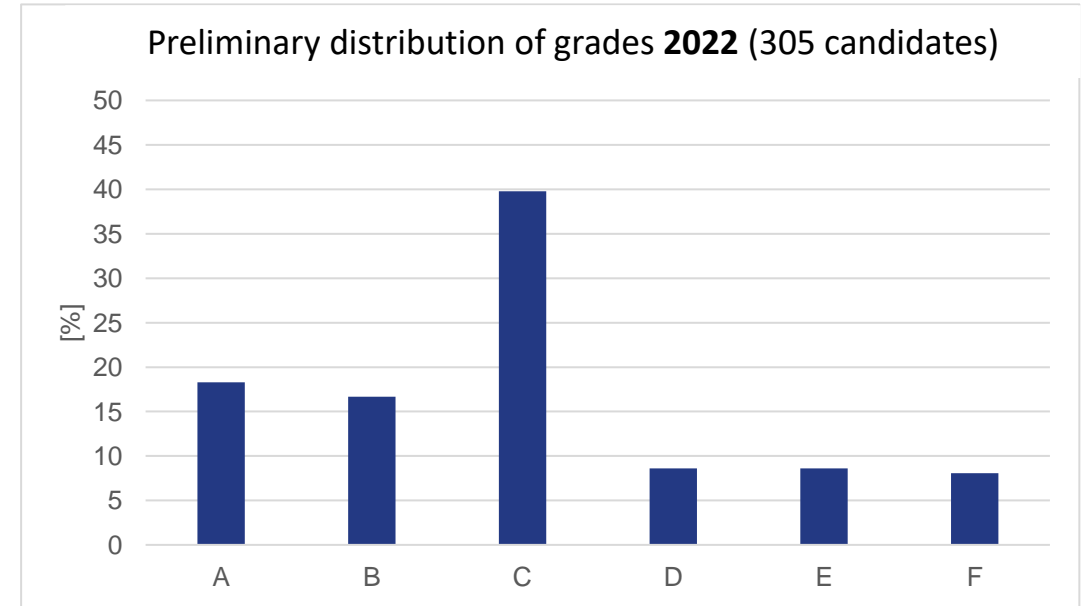
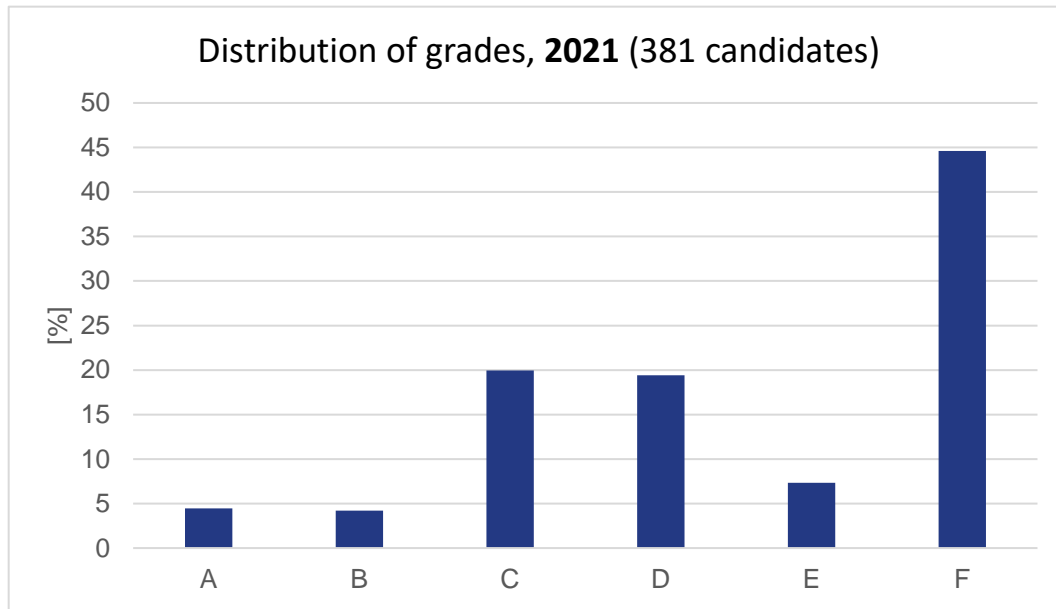
Timeplan for Samordna Opptak prøve #1				
Aud C2 036				
Uke 37	Man 12/9	Tirs 13/9	Ons 14/9	Tors 15/9
14:15 - 15:15		Forsøk #1 Data		
16:15 - 17:15	Forsøk #1 Mekatronikk	Forsøk #1 Elektronikk Fornybar energi	Forsøk #2 Elektronikk Fornybar energi	Forsøk #2 Bygg AI
18:15 - 19:15	Forsøk #1 Bygg AI		Forsøk #2 Mekatronikk	Forsøk #X Alle studieprogram Påmelding via lenke i Canvas
Uke 38	Man 19/9	Tirs 20/9	Ons 21/9	Tors 22/9
14:15 - 15:15		Forsøk #2 Data		
16:15 - 17:15	Forsøk #X Alle studieprogram Påmelding via lenke i Canvas	Forsøk #X Alle studieprogram Påmelding via lenke i Canvas	Forsøk #X Alle studieprogram Påmelding via lenke i Canvas	Forsøk #X Alle studieprogram Påmelding via lenke i Canvas
18:15 - 19:15	Forsøk #X Alle studieprogram Påmelding via lenke i Canvas		Forsøk #X Alle studieprogram Påmelding via lenke i Canvas	Forsøk #X Alle studieprogram Påmelding via lenke i Canvas



Start of semester



Preliminary results



Results

- Failure rate down from 45% to 8%.
- Number of A and B up from 7% to 33%

Thank you for your attention!

