ENHANCE
European Universities of Technology Alliance

THE ENHANCE ALLIANCE

TCA: Promoting Erasmus+ Mobilities in STEM in Higher Education - 05/16/2025

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Persona

- Philipp Hoehne, Master's student in biochemistry
- Erasmus+ in Vienna
- Co-founder of the local Erasmus Student Network association - ESN Berlin
- Currently Liaison Officer of ESN Germany
- ENHANCE Student
- Passionate about Erasmus+, mobility programs, internationalisation and education offers

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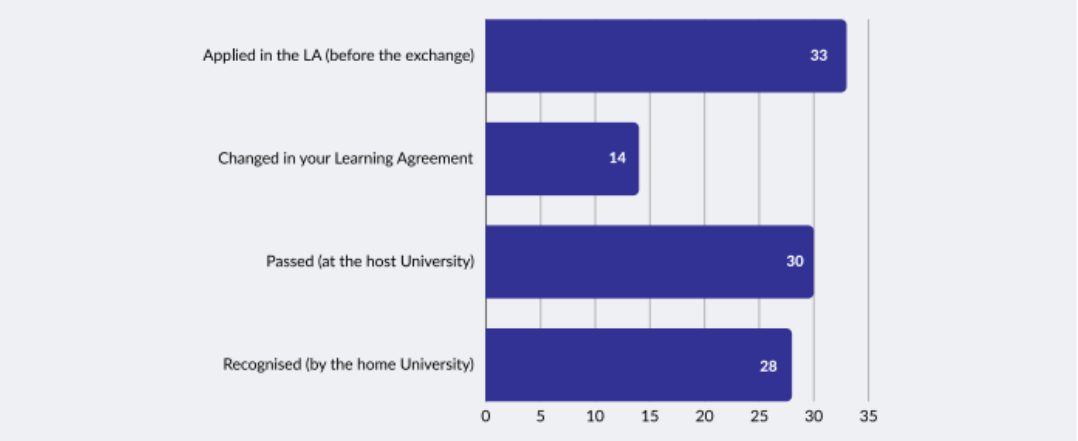
Status Quo from the ESNsurvey XV

- Low STEM participation in mobility ~ 28% of the participants (Engineering 18.56% & Natural Sciences 9.02%) from around 20,000 answers
- Academic course issues remain one key obstacle, with 33.97% of respondents reporting difficulties in this area
- Structural issues contributing to this problem:
  - Inflexibility in degree programs
  - Trust issues between partner universities
  - Recognition decisions influenced by individual professors
  - Lack of understanding of the ECTS system
  - Limited access to information about available courses

Recognition of learnings aboard, the credits taken compared with the credits recognised (N= 6,620).



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European University Alliances and STEM

What is the added value of ENHANCE for internationalisation in STEM mobility?

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The ENHANCE Alliance

CHALMERS UNIVERSITY OF TECHNOLOGY

ETH zürich

GDAŃSK UNIVERSITY OF TECHNOLOGY

NTNU Norwegian University of Science and Technology

POLITECNICO MILANO 1863

RWTH AACHEN UNIVERSITY

TU Delft

TECHNISCHE UNIVERSITÄT BERLIN

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

Warsaw University of Technology

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- Universities in Metropolitan areas
- Institutions at coastal/remote in-land locations
- Partners with a long industrial tradition
- Universities with a strong emphasis on agriculture

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Education Offers in ENHANCE

Innovative Learning Campus (ILC)
Advancing and sharing opportunities for physical and virtual short-term mobility.

ENHANCED Erasmus
Enhancing physical mobility opportunities for students and staff.

Guided Education Paths
Designing thematic learning pathways in targeted disciplines.

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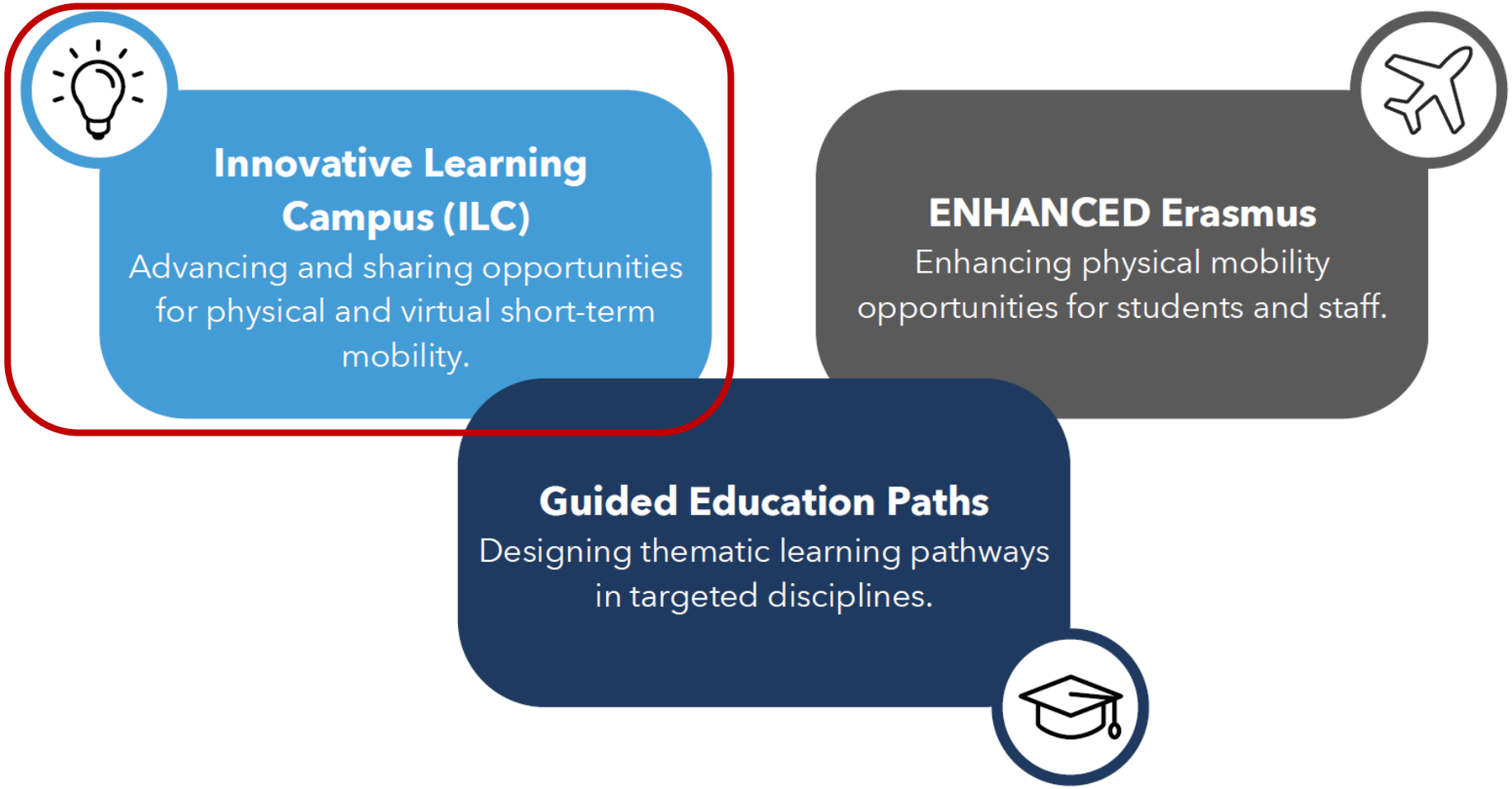
Education Offers in ENHANCE



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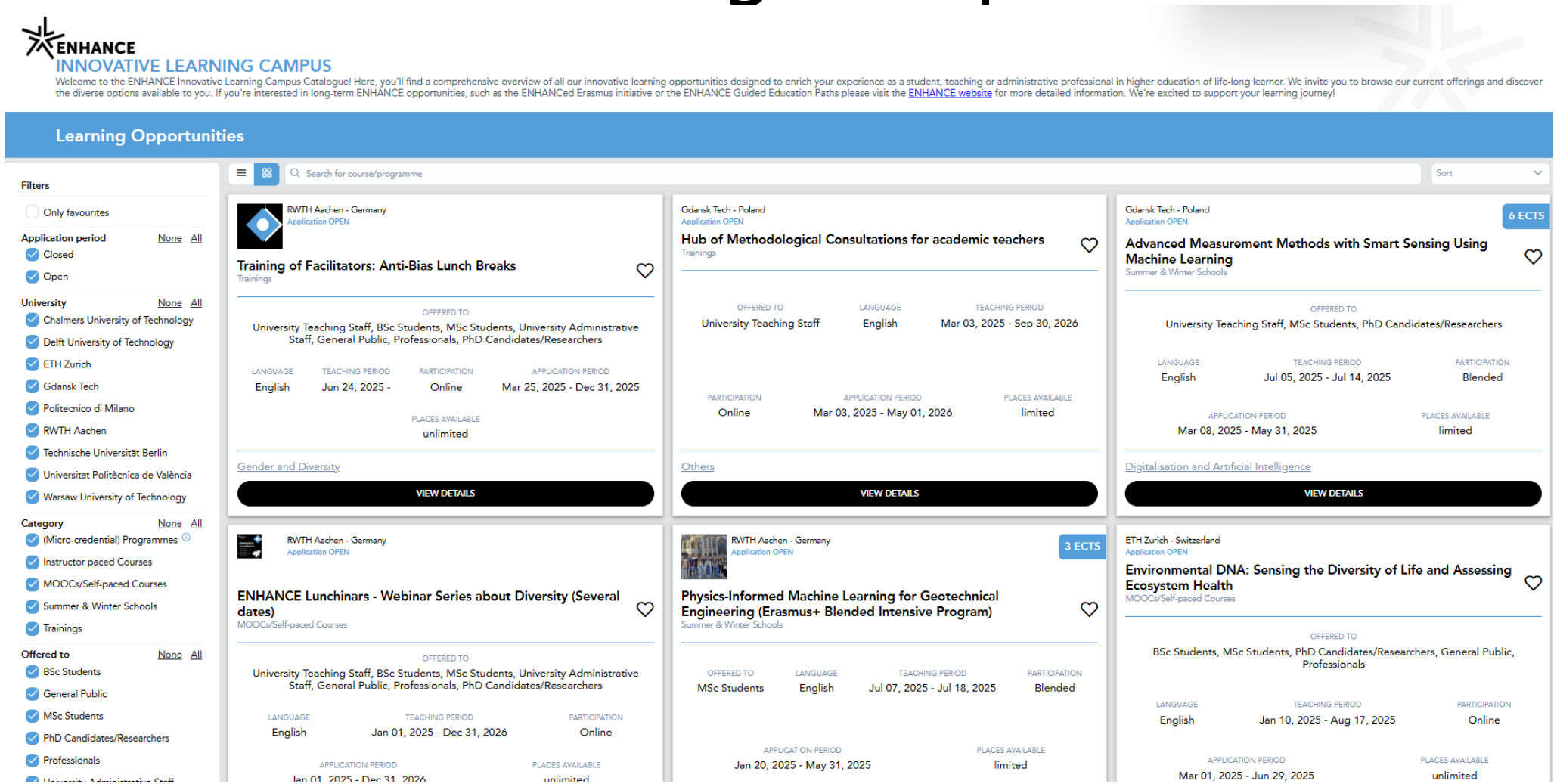
Innovative Learning Campus



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Education Offers in ENHANCE

Name	Category	ECTS	Editions	Number of registrations:
Ethics & Epistemology of AI	Summer & Winter Schools	6	3	243
Transdisciplinarity Methods for Dealing with Sustainability and Land Use Conflicts	Summer & Winter Schools	6	1	63
Built Environment and Architecture Education for Children and Youth	MOOCs/Self-paced courses	6	2	3
Engineering for Impact - Responsible Innovations	Instructor-paced courses	6	1	8
Microphone Array Project	Summer & Winter Schools	6	1	28
Advances in Water Management and Climate Adaptation	Instructor-paced courses	3	2	8
Gender and Diversity in Science, Technology and Society	(Micro-credential) Programmes	9	4	275
Democratizing Sustainability	Instructor-paced courses	6	1	104
Critical Sustainability	Instructor-paced courses	6	1	108
Plotting Sustainability	Summer & Winter Schools	6	1	26
Introduction to Gender & Diversity in Science, Technology and Society	MOOCs/Self-paced courses	3	2	52

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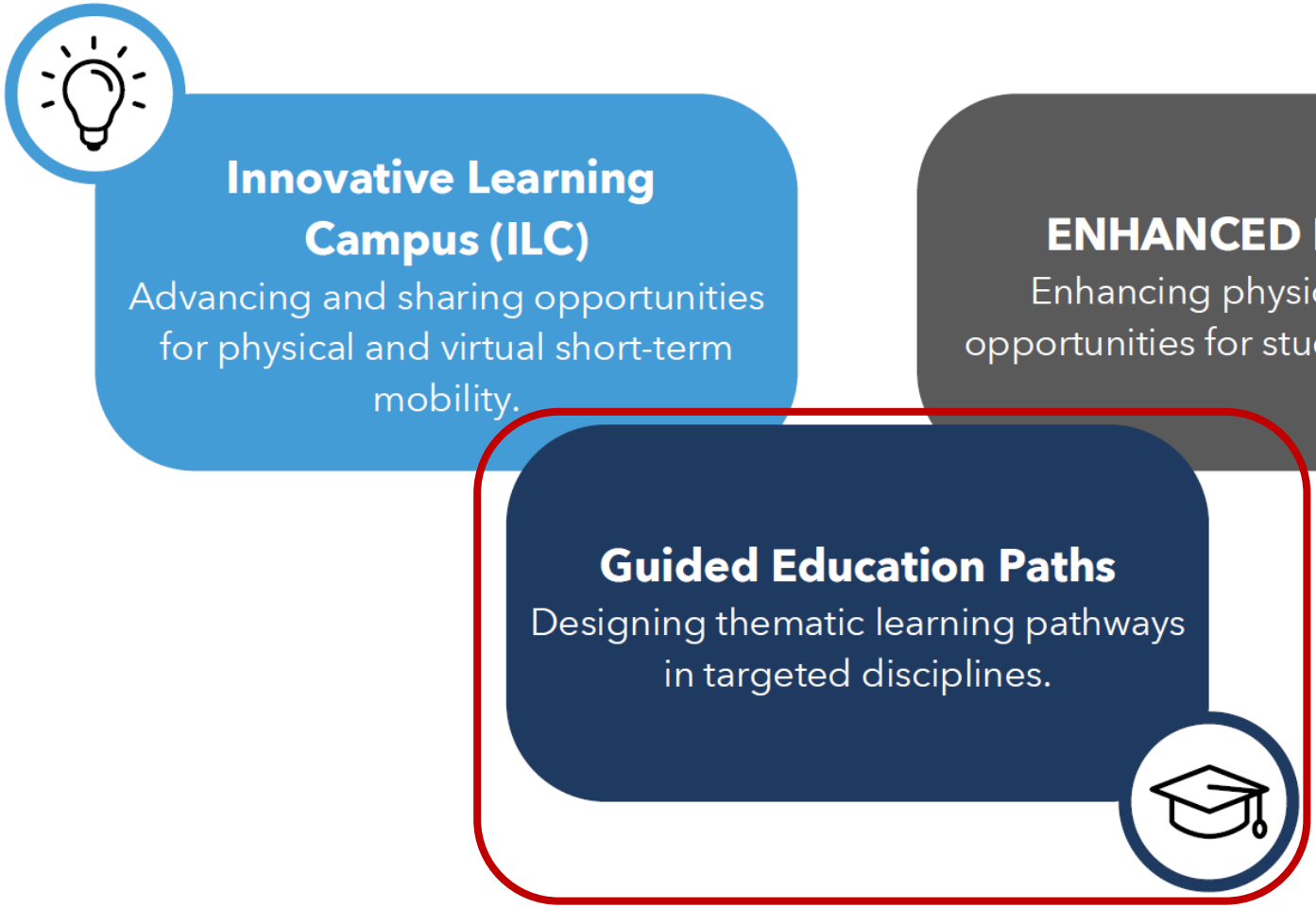

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ENHANCE Guided Education Paths

- Five pathways implemented so far:
  - B.Sc. & M.Sc. Mechanical Engineering
  - M.Sc. Computer Science
  - M.Sc. Energy Engineering
  - M.Sc. Urban Planning
- Pre-recognized courses for home programs → **Guaranteed ECTS Recognition!**
- Up to two mobilities in a row
- Combination of physical, virtual, and short-term mobility → **Adaptable Mobility**
- ENHANCE Education Dashboard with >1.000 courses
- First exchanges in summer 22/23
  - Since then: ~72 participants from TU Berlin including the upcoming semester
- Long-term vision: **ENHANCE Degree Label** based on the European Degree Label

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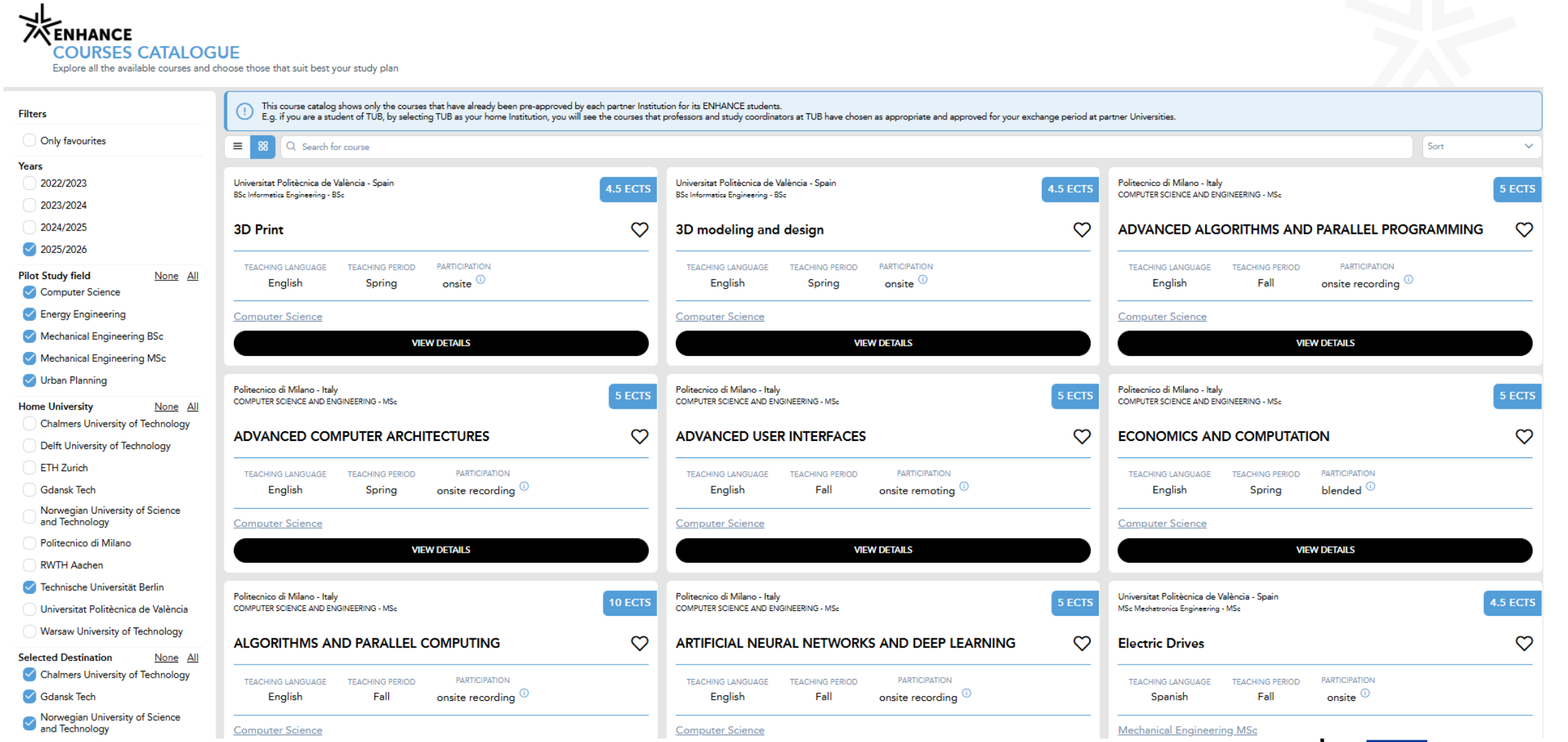
Pre-approved Course Catalogue



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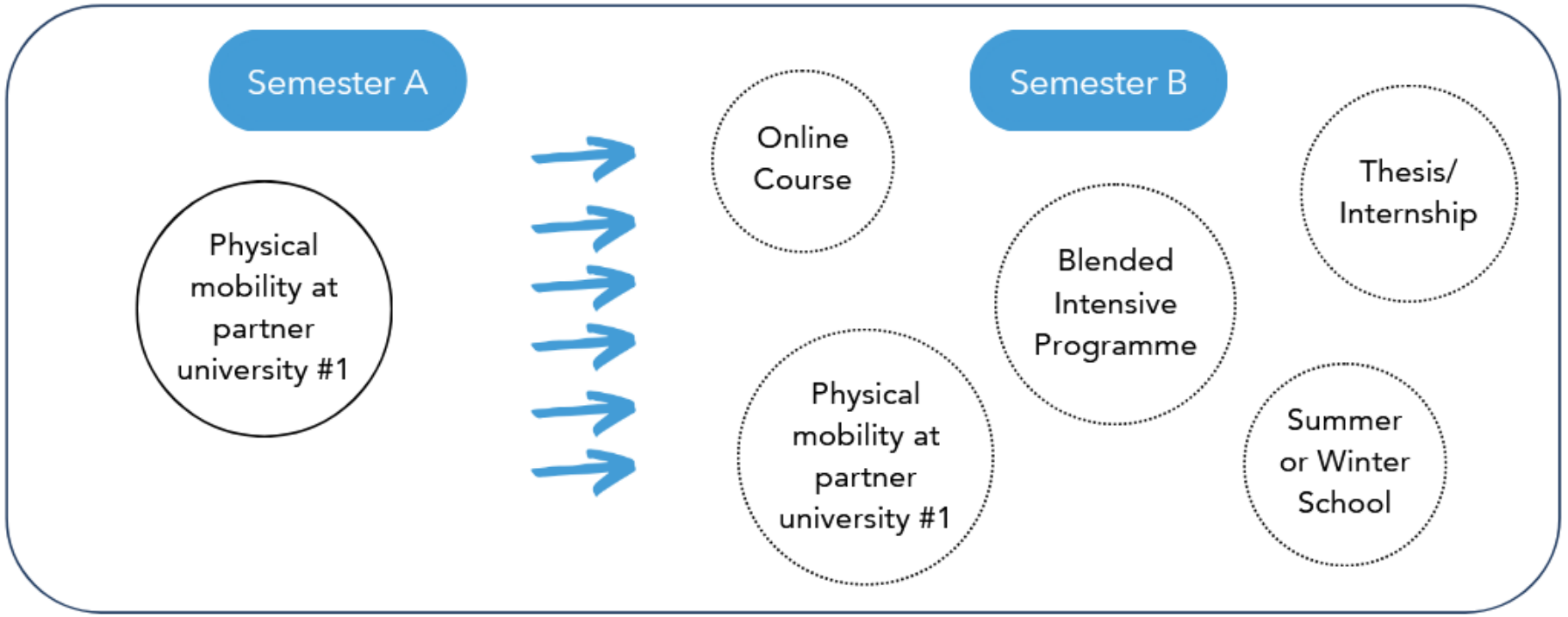
ENHANCE Guided Education Paths



Layer 1:
Semester-based Offers

+

Layer 2-3:
Other Offers

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ENHANCE Guided Education Paths in action

Example Scenarios:

Water Energy Path for a PoliMi student in Energy Engineering

*Semester mobility (incl. set of semester-based courses) at **Warsaw University of Technology***

+

*Thesis abroad at **Chalmers University of Technology***

Water Energy Path for a Chalmers student in Energy Engineering

*Semester mobility (incl. set of semester-based courses) at **TU Berlin***

+

*Summer School at **Gdańsk Tech***

+

MOOC at **UPV**

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Impact on mobility in STEM

1. Systemic Impact
   - ENHANCE addresses **mobility barriers** on institutional and regulatory level
   - Example: efforts to adapt general study regulations
2. Improved participation from low-mobility STEM fields
3. Guaranteed ECTS Recognition
4. Stronger promotion of different types of mobility for different situations

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Challenges and Lessons Learned

1. Guaranteed ECTS recognition has its cost
   - Diverse credit recognition practices
   - Still low participation numbers
2. Resistance from some professors remain ("my lecture is irreplaceable")
3. STEM-specific issue are unsolved
   - Long module structures (e.g. spanning two semesters, lab-courses)
4. Gradual mindset change through continuous dialogue with faculty needed
5. More communication about the options needed
6. Pre-recognized courses must become standard

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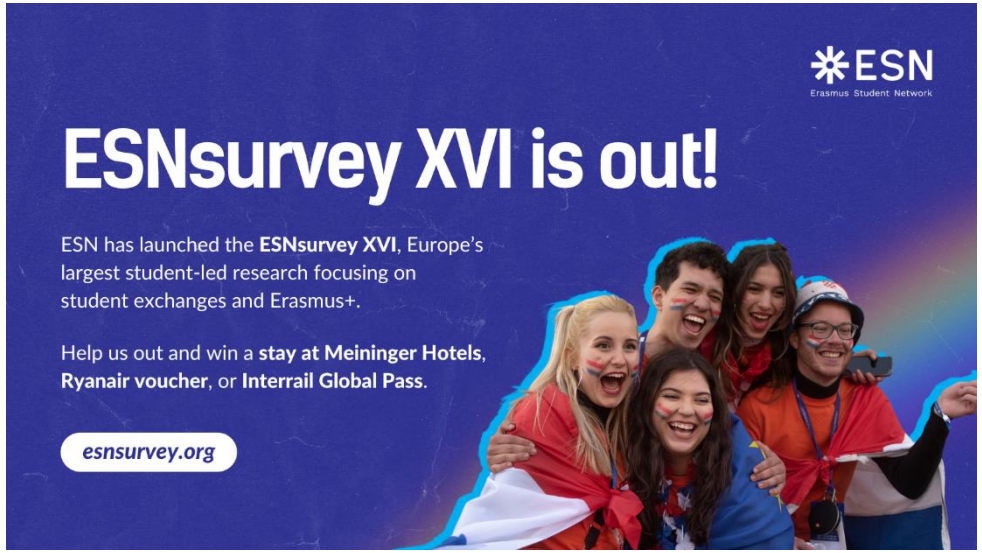
ESNsurvey XVI is out!

- Open until **31 July 2025**
- Target Groups
    1. Exchange students (mobility since Aug 2023)
    2. Full-degree international students (studying abroad since Aug 2021)
    3. Non-mobile students (currently enrolled in higher education)
- Enhanced Content on:
    - Alumni who went abroad before Aug 2023
    - European University Alliances
- Take a look → https://esnsurvey.org/



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Thank you for your attention!

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