

NextGEng

International Cooperation Framework for
Next Generation Engineering Students

October 15, 2024



Co-funded by
the European Union



jamk



Universidad de Jaén



BOSCH
Invented for life

About NextGEng

The International Cooperation Framework for Next Generation Engineering Students project, NextGEng, is an international consortium with the aim of creating new international teaching models in close collaboration with companies. It comprises three types of activities:

- **Training:** Experts in pedagogy and teacher training sustain the skill improvement of HEIs partners in new/innovative teaching methods.
- **Team Teaching:** Upgrade a set of engineering courses, belonging to the HEI partners curricula, in close collaboration with companies' partners.
- **Cases for Experiential Learning (CEL) projects:** Type of projects where students learn by doing in an international and multidisciplinary environment.



www.nextgeng.eu



Co-funded by
the European Union

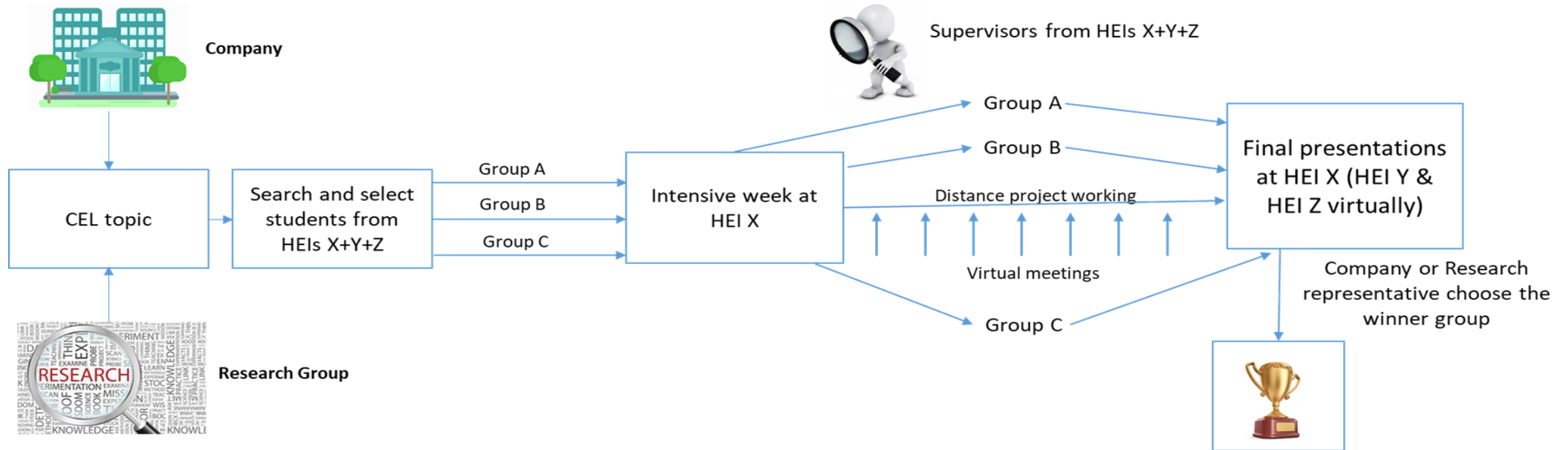


jamk



What is a CEL project?

Cases for Experiential Learning (CEL) projects focus on **bringing students, HEI staff and companies to work together**. The idea is that students from different study programs and nationalities are brought together to form mixed groups in order to solve a research or industry topic.



Co-funded by
the European Union



jamk



Universidad de Jaén



www.isr.es



Invented for life

What is a CEL project?

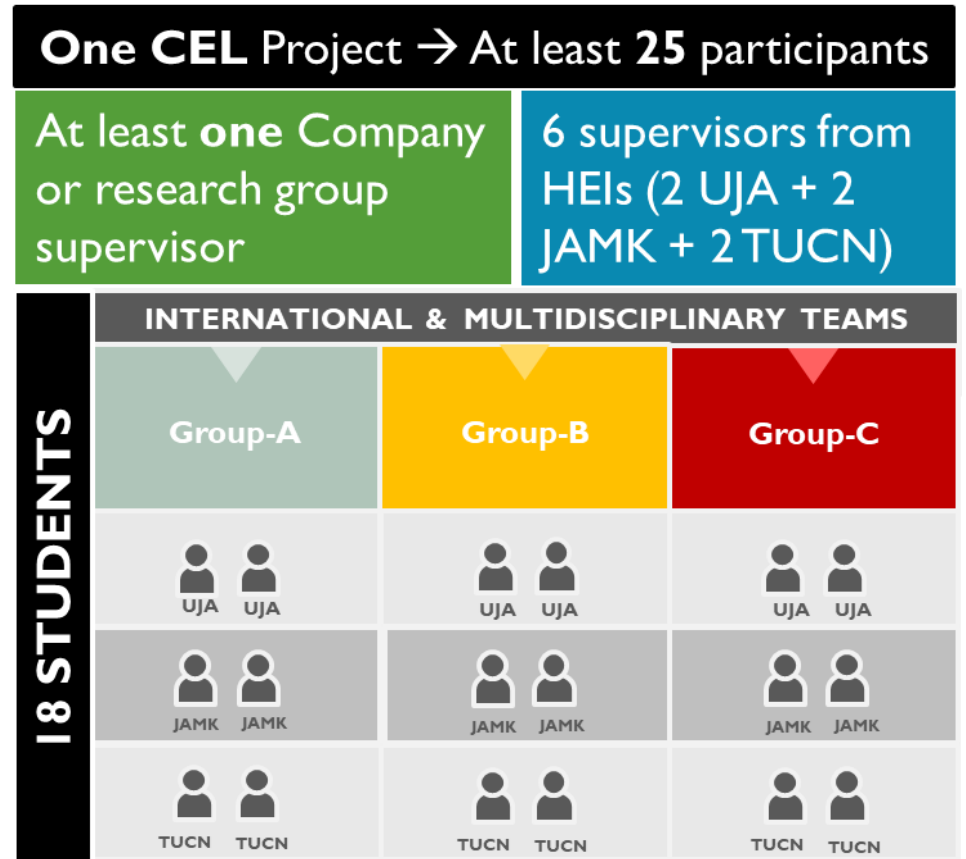
- Two rounds of CEL projects - 3 projects in each round
- At least 150 participants in total

ROUND	Company/research group representative	HEIs supervisors	Students
1	At least 3	18	54
2	At least 3	18	54

ROUND	Start Date	End Date
1	12/02/2024 (M17)	26/04/2024 (M19)
2	01/06/2024 (M21)	30/07/2025 (M34)

3 projects in 2024, spring semester
(ISR+TUCN research group+Valmet)

3 projects in 2025, spring semester
(UJA RG + Bosch + Valmet)



Co-funded by
the European Union



jamk



Second round_CEL4 → BOSCH

- **Title:** Evaluation of the screws tightening and elongation in PCB mounting operations
- **Objective:** Identify the optimal tightening range and elongation of M6 screws in PCB mounting across various housings
- **Student tasks:**
 - project planning
 - determine the tightening range (elastic region tightening/plastic region tightening/breakage) and elongation of M6 screws used in PCB mounting operation
 - analyze the situations where the screw fractures, while final tightening torque is not reached and inside of the given angle tolerance
 - utilize tightening equipment for testing and analysis
 - review and apply relevant standards (ISO 261, ISO 68, ISO 262, ISO 724, ISO 965-1) for screws and nuts to ensure compliance with industry specifications
- **Student profile:** Multidisciplinary



Co-funded by
the European Union



jamk



Universidad de Jaén



www.isr.es



BOSCH
Invented for life

Second round_CEL4 → BOSCH

- Technical University of Cluj Napoca [TUCN], www.utcluj.ro
- TUCN situates in Cluj -Napoca and there are over 20 000 students
- Cluj-Napoca – “*The heart of Transylvania*”
 - more than 2000 years old
 - there are over 300 000 inhabitants + 100 000 students



Co-funded by
the European Union



jamk



Universidad de Jaén

iSR
www.isr.es

Valmet

BOSCH
Invented for life

Second round_CEL5 → Valmet

<https://www.valmet.com/>



- **Title:** Automatic or semi-automatic cleaning to be developed for the blade change device
- **Objective:** Conceptualizing and designing a “cleaning ability” for a blade changing device. Device is manufactured by 3D printing. The removal of waste generated by the cleaning process must also be planned.
- **Student tasks:**
 - Project planning
 - Developing and designing the object for a 3D-printing manufacturing process
 - 3D models and/or concept-level technical drawings
 - 3D printed model
- **Student profile:** Multidisciplinary



Co-funded by
the European Union



jamk



Universidad de Jaén



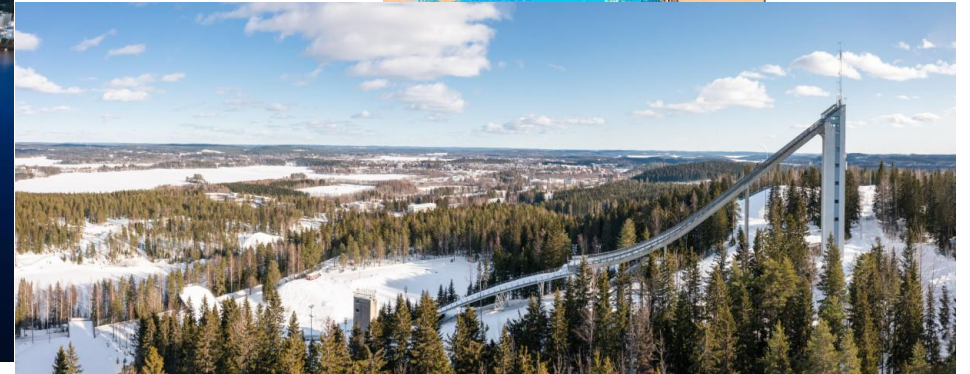
BOSCH
Invented for life

Second round_CEL5 → Valmet

<https://www.valmet.com/>



- **Jamk University of Applied Sciences (Jamk)**, <https://www.jamk.fi/en>
- **Jamk** situates in Jyväskylä and is a creative institute of higher education. It has over 8 500 students and 900 employees.
- Jyväskylä is a city in Finland and the regional capital of Central Finland. It is located in the Finnish Lakeland. The population of Jyväskylä is 150,000.



Co-funded by
the European Union



jamk



Universidad de Jaén



www.isr.es



BOSCH
Invented for life

Second round_CEL6 → UJA RG

- **Title:** Products redesign via Additive Manufacturing (AM)
- **Objective**

Project: Jet engine combustion chamber mockup redesigned aided by AM

Learning: Understand how Additive Manufacturing speeds up product development

- **Student tasks:**
 - Project planning
 - Reverse engineering to obtain the chamber's main dimensions
 - 3D model and identification of materials and manufacturing operations
 - 3D model redesign based on AM: proposed demonstrator with fewer components
 - Numerical simulation of flow lines through the demonstrator
 - Mockup by Rapid manufacturing: AM but also machining, plastic forming, etc
- **Student profile:** Multidisciplinary



Co-funded by
the European Union



jamk

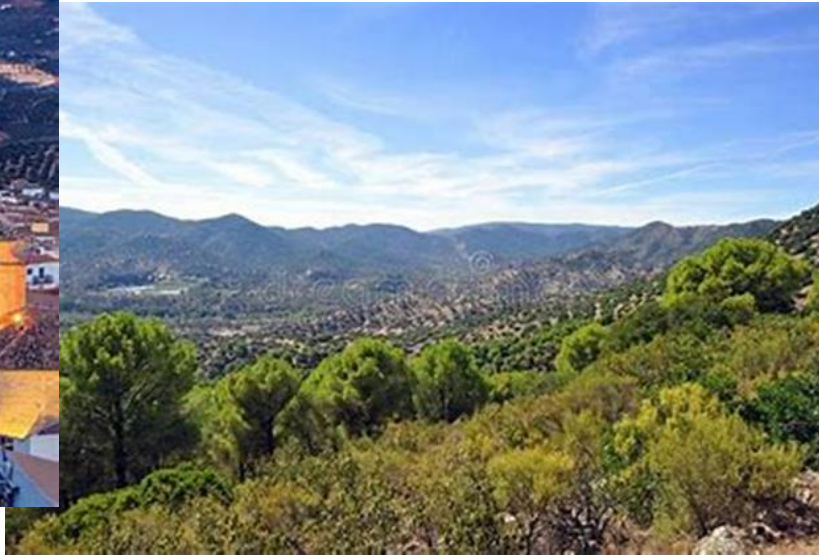


Universidad de Jaén



Second round_CEL6 → UJA RG

- UJA situates in Andalusia, there are over 17 000 students
- In Jaén there are about 120 000 inhabitants and millions of olive trees



Co-funded by
the European Union



jamk



Universidad de Jaén

iSR
www.isr.es

Valmet



BOSCH
Invented for life

Schedule

Week 7 → Intensive week

Week 8
Week 9
Week 10
Week 11
Week 12
Week 13
Week 14
Week 15
Week 16

**DISTANCE
WORK**

Week 17 → Final presentations

**IMPORTANT
DATES BEFORE
THE INTENSIVE
WEEKS**



29.10.2024 Opening time for student application: an e-mail message with participation form and CV to contact person in your university

22.11.2024 Deadline for student application time

29.11.2024 Student selection time

2.12.2024 Selected students can start to book flights and hotels; Silvia(UJA)/Petri (Jamk)/Ciprina (UTCN) will help with this process!



Co-funded by
the European Union



jamk



How to apply

REQUIREMENTS

- NOT finish your studies before **June 2025**
- Ability to work in a team
- Basic knowledge of the chosen CEL topic

BENEFITS OF DOING A CEL PROJECT

- Certification of the activity
- Possibility of doing the bachelor thesis in the CEL subject
- Multidisciplinary cooperation
- International cooperation
- Solving a case of study from Industry
- Solving a case of study of a Research Group
- Learn a little bit from a new country and its university
- Learn at least something from a new culture, etc.

SCAN ME 



[Student Selection – CEL Projects](#)
[2nd Round - Nextgeng.eu](#)



Co-funded by
the European Union



jamk



Universidad de Jaén



www.isr.es



BOSCH
Invented for life

How to apply

Co-funded by the European Union

NextGEng

CEL projects. Participation form

Contact details			
Name and Surname			
Identity card	Ei tarvita	E-mail	
Bachelor or Master specialization	Ei tarvita	Phone	Ei tarvita
Estimated date of completion of studies			
CEL Project preference	CEL 4. Bosch Cluj Plant	CEL 5. Valmet	CEL 6. UJA
Preferences	II	I	III
Motivation (Write in 200 words maximum why you want to participate in this project)			
Contribution (Write in 200 words maximum what you think you can contribute to this project)			
Highlights (Write in 100 words maximum other aspects that you would like to communicate to the people selecting the team that will develop this project. Aspects related to your skills, your training in other aspects that you consider should be taken into account as well as your capacity for effort and commitment).			
Date and Signature			

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Technical University of Cluj-Napoca | jamk | Universidad de Jaén | iSR | Valmet | BOSCH

Contact details			
Name and Surname			
Identity card	Ei tarvita	E-mail	
Bachelor or Master specialization	Ei tarvita	Phone	Ei tarvita
Estimated date of completion of studies			
CEL Project preference	CEL 4. Bosch Cluj Plant	CEL 5. Valmet	CEL 6. UJA
Preferences	II	I	III
Motivation (Write in 200 words maximum why you want to participate in this project)			
Contribution (Write in 200 words maximum what you think you can contribute to this project)			
Highlights (Write in 100 words maximum other aspects that you would like to communicate to the people selecting the team that will develop this project. Aspects related to your skills, your training in other aspects that you consider should be taken into account as well as your capacity for effort and commitment).			
Tähän vain nyt opintorekisterissä olevat opintopisteet.			
Date and Signature			
Ei tarvita allekirjoitusta			

(Do not write more than two pages). Please also attach an informative note about your academic record and level of English.

Contact:

University of Jaén (Spain):

- Silvia Satorres Martínez
(satorres@ujaen.es)
- José Ignacio Jiménez González
(jignacio@ujaen.es)

JAMK University of Applied Sciences (Finland):

- Petri Luosma, (petri.luosma@jamk.fi)

Technical University of Cluj-Napoca (Romania):

- Ciprian Lapusan
(ciprian.lapusan@mdm.utcluj.ro)

IMPORTANT DATES

! Send the form by email before 18.11.2024

Results announcement: 29.11.2024



Co-funded by
the European Union



BOSCH
Invented for life

Thank you!



nextgeng.eu



Co-funded by
the European Union



jamk



Universidad de Jaén



BOSCH
Invented for life