

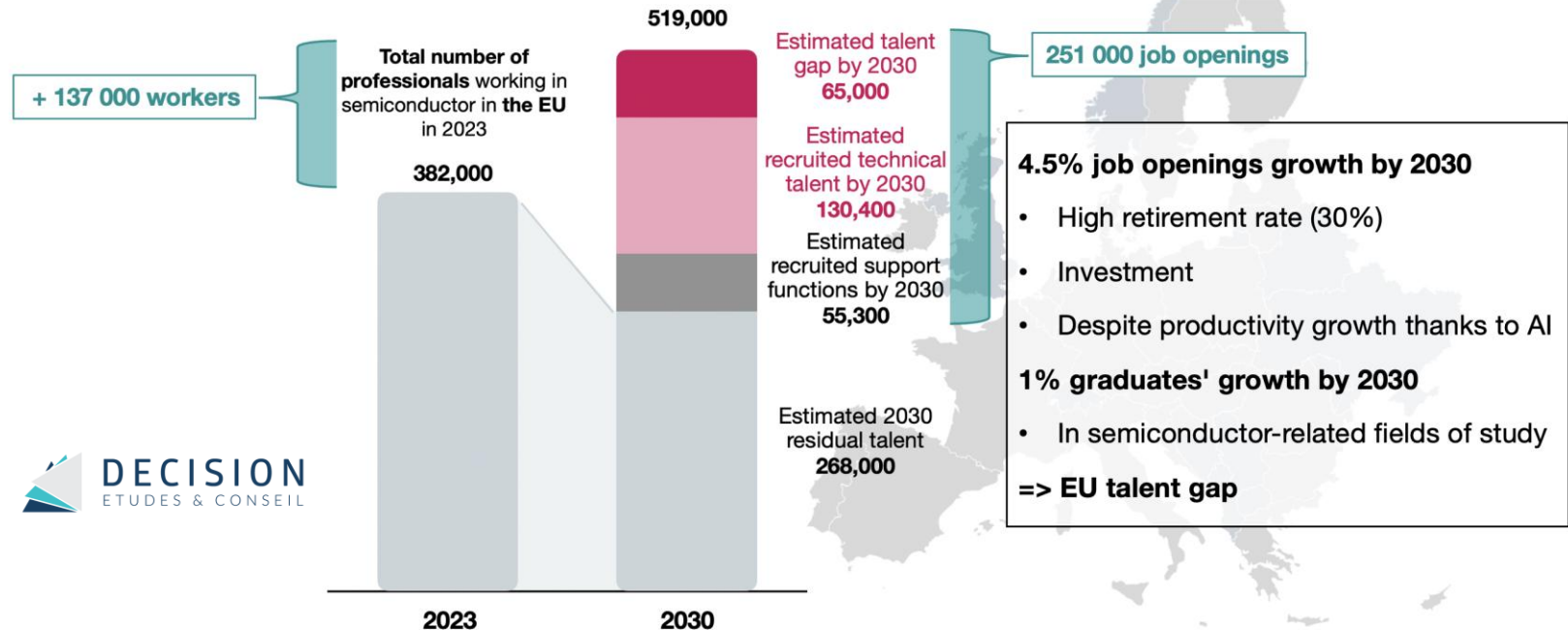
European Chips Skills Academy

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EU Semiconductor Value Chain: Talent Gap Forecast (2024–2030)



Source: DECISION Etudes & Conseil, European Skills Strategy, ECSA, October 2025

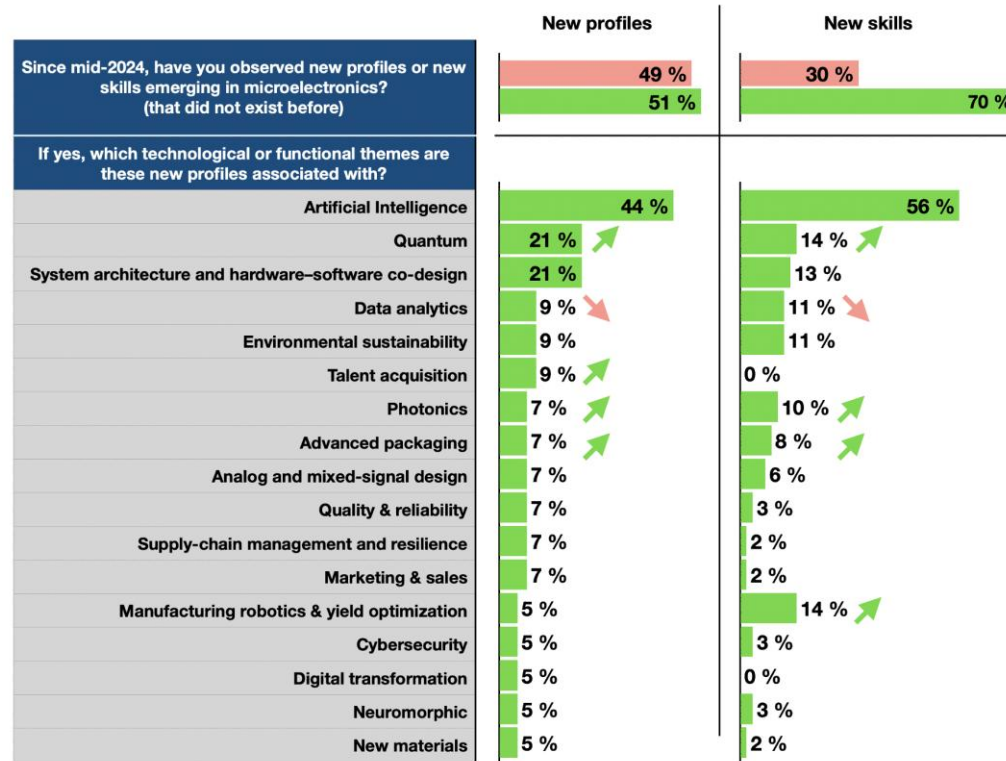
EU regions facing a talent gap versus talent surplus in semiconductor



Main Talent Gap Locations in 2025

- **Design & test:** Most IDMs and fabless in Europe
- **Front-end:** Germany, Ireland, Italy, Austria (*ESMC, Intel, ST, Infineon, AMS...*)
- **Back-end:** Italy, Malta, Portugal (*Silicon Box, ST, Amkor...*). Possibly France in 2026
- **Pilot Lines:** Belgium, France, Italy, Germany, Spain
- **Equipment & tools:** The Netherlands, Germany (*ASML and ecosystem*)
- **Materials:** Italy and Finland (wafers), Germany (gases and advanced chemicals)

Key evolutions since 2024



Panel: 84 answers (left) and 90 answers (right)

- **AI** remains by far the domain where new profiles and skills are experienced.

- **Data analytics decreasing**

- **Rising topics compared to last year:**

- Quantum
- Talent acquisition
- Photonics
- Advanced packaging

- **Manufacturing robotics & yield optimization**

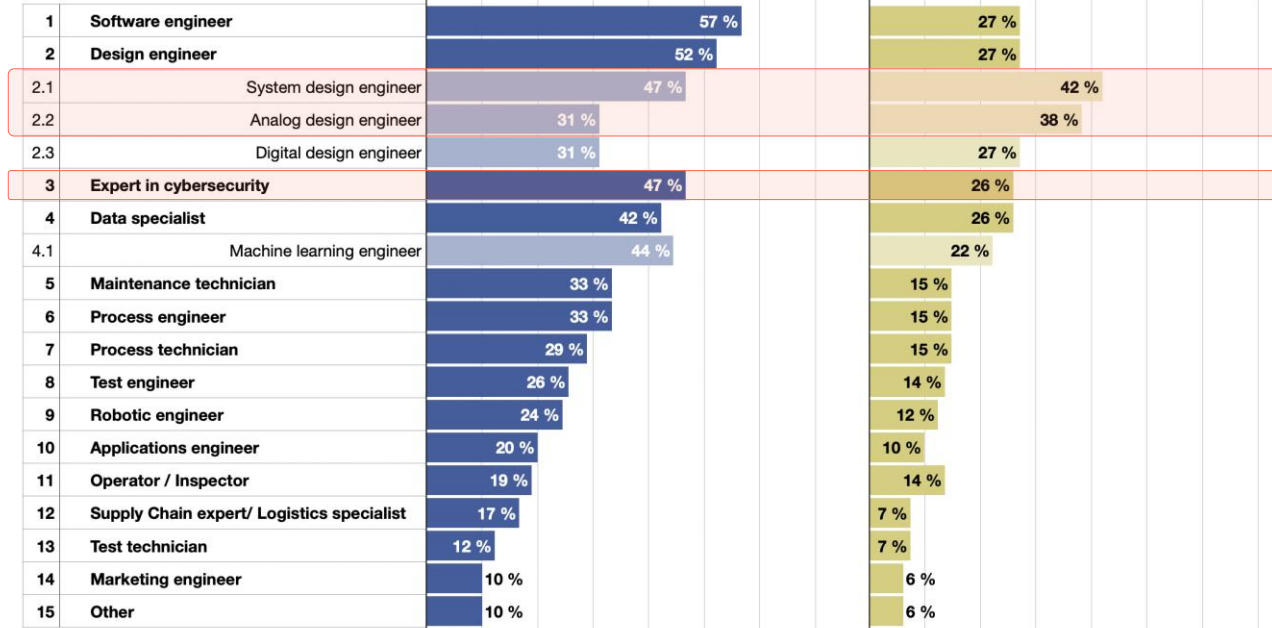
Efforts from companies to deploy AI and automated tools in fabs, requiring upskilling of the existing workforce

2025: Most critical job profiles on the European job market

2025: The 15 job profiles identified as the most critical in the European microelectronics industry

Percentage of stakeholders indicating the profile as the most:

- **Sought after** (out of 90 answers)
- **Scarce** (out of 81 answers)



Senior profiles with very high shortage...

...despite small number of profiles needed:

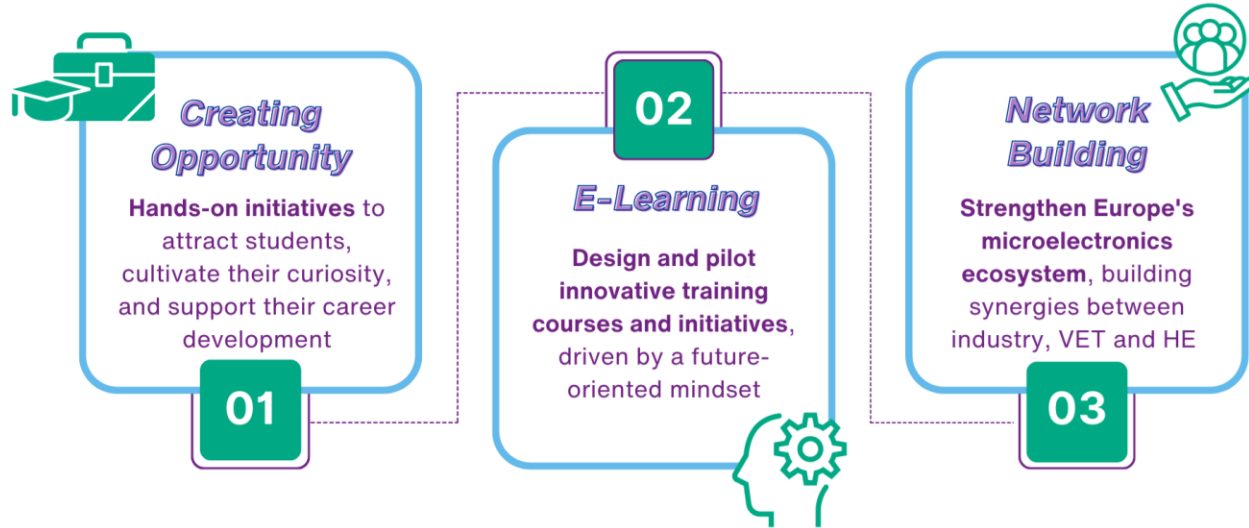
- 550 system designers / year
- 350 analog designers / year
- 430 cyber experts / year

-> Need for specialised training hubs

→ Rising Competition for Senior Talent, increasingly sourced outside of Europe

- High risk for the EU economic security
- High risk for EU competitiveness

European Chips Skills Academy



Erasmus+

Oct 2023- Sept 2027

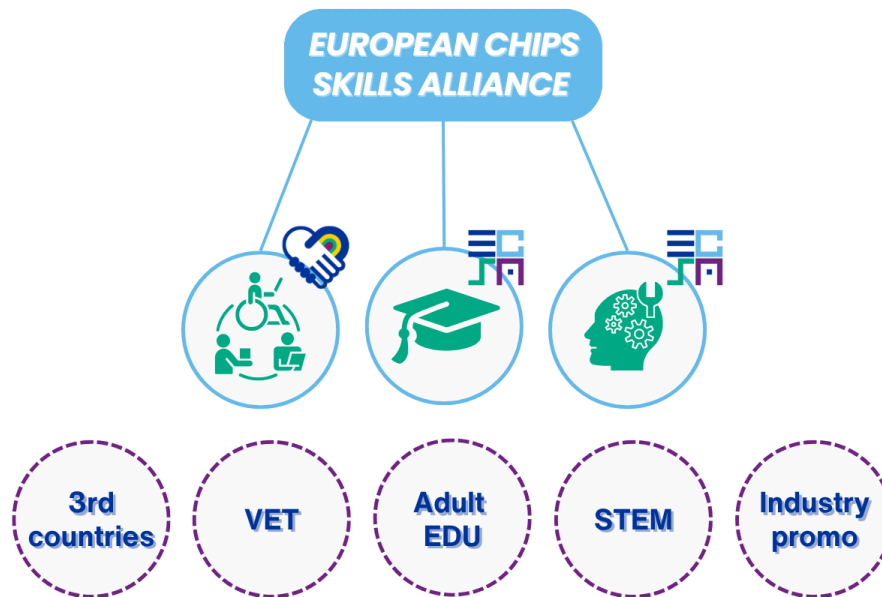
Coordinated by SEMI

18 partners from 11 countries

Research, education, industry

Building a systematic approach

- **Coordinating what is already happening at**
 - EU level
 - National level
 - Company level
- **Targeted actions for key target audiences**
 - Learning from and scaling best practices
 - Support for implementation
 - Reaching out to SMEs
- **Link with the broader ecosystem**
 - National Chips Competence Centres (aCCcess)
 - Pilot Lines
 - Industrial Alliance



The Alliance today

Next meeting of the EDU WG on 9 Dec with presentations from:

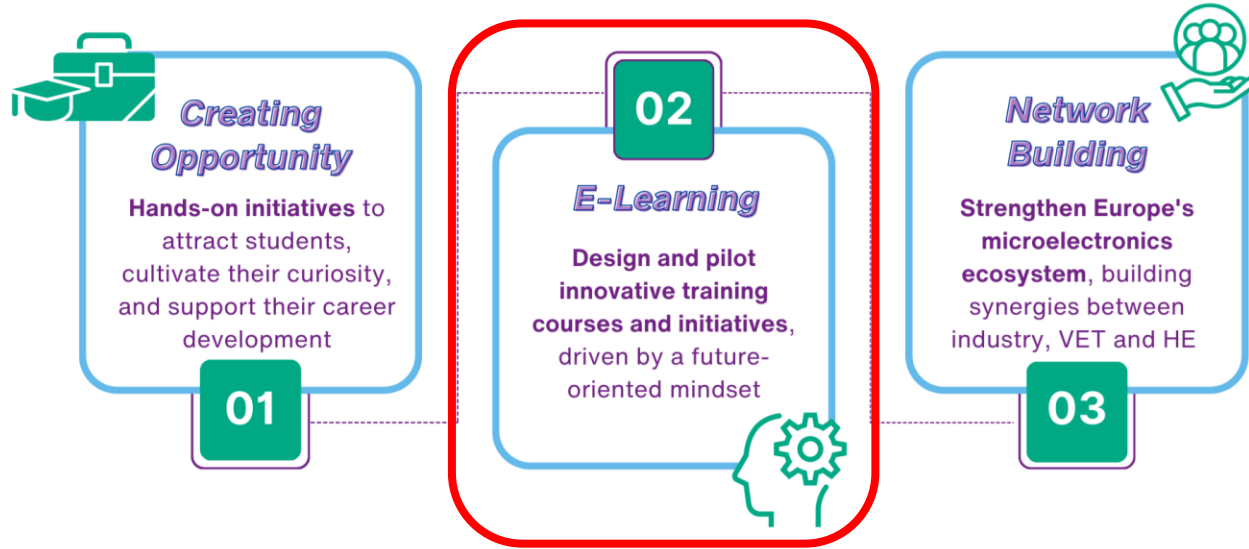
- TU Delft on their “micro-master” for adult learners
- Pact for Skills administration on upcoming EU-wide survey
- ECSA partners on student ambassadors & upcoming training activities

Become a member



230+ members from 154
different companies,
universities, VET
providers, and RTOs

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Training development



Building partnerships to combine our efforts and centralize information:



Core skill areas

Microelectronics

- Design
- Manufacturing
- Testing

Digital

- AI / ML
- Cybersecurity
- Data analysis

Entrepreneurial

- High-tech startups
- Accessing the Chips Fund
- Risk financing

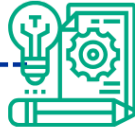
Green

- Circular economy
- Environmental legislation
- Sustainability in microelectronics

62 ECSA courses to be developed by 2027

Upcoming courses: Snapshot

INTRODUCTORY TECHNICAL COURSES



*E.g.,
nanotechnologies,
cybersecurity,
MEMS*

SPECIALIZED TRAINING FROM INDUSTRY



 Infineon

*E. g., Process
control monitoring
measurement in
wafer
manufacturing,
Basics of GaN
power devices*

SPECIALIZED TRAINING FROM ACADEMIA



*E.g., design
circuit
challenge,
bioPCBs*

SPACIALIZED TRAINING FROM VET



*E.g., Electronics
– analog
devices, Develop
a Business Plan*

Extra: ECS Summer School

ECS Summer School - Fascinating electronics for a cool world

⌚ 11 hours | Learning Hours: 30h | level: Advanced | category: Career Guidance | @ -

ECTS Credits: - | EQF Description: -

Description

Over this 5-day programme, students are introduced to some of the possibilities offered by present microelectronics devices and foreseen future applications, showing the fascinating world of microelectronics in various fields such as sensor interfaces, power devices, radio-frequencies and digital.

Curriculum

1. Introduction ⌚ 29 minutes

- ▶ "Setting the scene" by Patrick Cogez, Technical Director at AENEAS @

⌚ 29 minutes

2. Microelectronics technology ⌚ 3 hours

- ▶ "Moore's Law" by Frans List, ASML @
- ▶ "Semiconductors nanofabrication", by Yannick Le Tiec, CEA-LETI @
- ▶ "Towards Net-Zero emission" by Mikael Östling, KTH Royal Institute of Technology @
- ▶ "More than Moore technologies : Infrared detectors technologies at LYNRED", by Laurent Rubaldo, Senior R&D Scientist at LYNRED @
- ▶ "Building a Si quantum computer" by Giselle Elbaz, Quobly @

⌚ 29 minutes

⌚ 44 minutes

⌚ an hour

⌚ a minute

⌚ 44 minutes

3. Electronics design ⌚ 4 hours



+ Lessons from 2025 edition

ECSA Micro-credential Approach



- Information **will be visible** through ECDSA Learning Platform
- learn.chipsacademy.eu
- Pilot launch planned during **Autumn 2025**



Digital Badge

Copy code

QR code

Person

Marek Spányik
Name

marek.spanyik@vsb.cz
Email

Badge

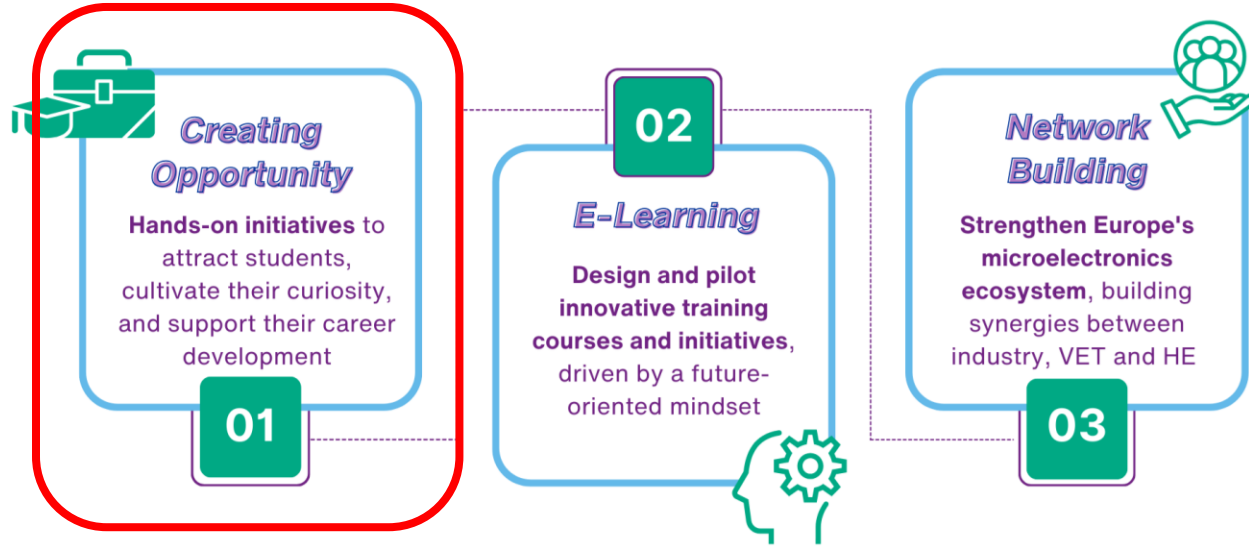
DRIVES Framework
Issued

This badge is for identifying process improvements on
Practitioner level.
Description

Complete training with identifying process improvements
Practitioner level.
Earning Criteria



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Erasmus+

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Research, education, industry

ECSA's impact will depend on you!

- Virtual tours for students (Secondary & HEI)
- Showcase your facility and job opportunities to prospective graduates
- Live Q&A with key professionals from critical job roles to give students a real world look at what's available



The poster features a central image of a person in blue gloves holding a silicon wafer. A blue line arches over the wafer. The background is light blue with a green footer section.

  **OKMETIC**

Day in the Fab: Life at Okmetic

MEET THE MINDS
BEHIND NORTHERN
SILICON INNOVATION

Based in Finland, Okmetic's customized silicon wafer solutions make the world smarter, safer and more energy efficient!

QR CODE TO REGISTER

ZOOM WEBINAR
15 SEPTEMBER 2025
1PM - 2PM CEST

1:00-1:15	Discover ECSA and Okmetic
1:15-1:20	Behind the Scenes: Fab Facility Tour
1:20-2:00	"A Day in My Life" with Heikki Holmberg (Research and Development Director) and Nikita Bobrov (Process Development Engineer) with live Q&A

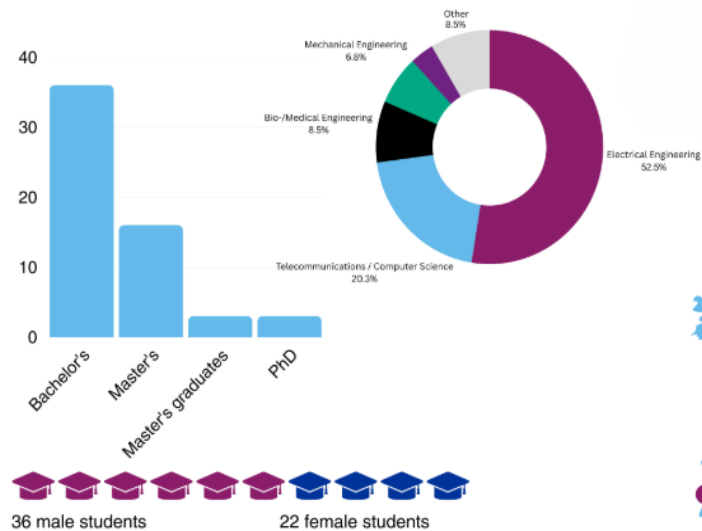
ECSA Student Forum

- First hosted at TU Delft on 24 April 2024
- Program included:
 - Speakers from industry showcasing different semiconductor applications / jobs
 - Student research presentations
 - Panel discussion with students, professors, and industry on barriers for students
- **Next edition planned for UPM (Universidad Politécnica de Madrid) in early 2026**



ECSA Student Ambassador Program

58 Student Ambassadors



What ECSA offers:

Interested in
connecting with us
and exploring how
we can collaborate?

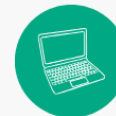


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Expert-driven learning

High-quality training content co-created with some of Europe's leading semiconductor stakeholders.



A platform that grows with you

Flexible, ready-to-use e-learning that can adapt to your changing needs and priorities.



Your developing European skills hub

One-stop access to knowledge, resources, and talent opportunities across the EU semiconductor landscape.



A thriving community

Connect with students, professionals, and peers shaping the future of chips in Europe.

ECSA is committed to turning a shared vision into reality: ***seamlessly connecting all skills-related initiatives and key stakeholders*** to maximize impact for learners, trainers, and students across Europe.

Thank you!

Stay up to date on latest events and activities through our website → ChipsAcademy.eu

Follow ECSA on social media:



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