

PCTO STEM ENGLISH PROGRAMME

2025
26



THEME STEM IN ACTION

INNOVATION, LANGUAGE & FUTURE SKILLS



Duration: 2 weeks | 30 hours total

Target: Vocational/technical school students (15–19)

Level: B1 CEFR and above

Location: Dublin

Approach: CLIL • Project-Based Learning • ESP • Task-Based Learning

THE PEDAGOGICAL FRAMEWORK

This course **fuses STEM disciplines (Science, Technology, Engineering, and Mathematics)** with **English for STEM (ESP)**, enabling students to learn technical content and the language to communicate it. CLIL principles ensure **hard CLIL** through the **direct exploration of scientific and technological content** (e.g., Arduino programming, robotics, eco-engineering) and **soft CLIL** through language scaffolding (STEM vocabulary, functional phrases, oral presentations, written project reports).

The focus is on **21st-century skills—critical thinking, collaboration, creativity, and communication (4Cs)**—while integrating **English practice naturally into STEM projects**. Students will visit real Dublin innovation sites and create tangible STEM outputs (prototypes, videos, posters), developing both linguistic accuracy and technical fluency.

This programme fulfills PCTO criteria through real-world application, transversal skills development, and professional orientation.



SAMPLE PROGRAMME – 2 WEEKS



Week 1

Day	Morning (9:00 – 12:15)	Afternoon (13:45 – 17:00)
Mon	Orientation & English for STEM - Icebreakers: "Inventors & Gadgets" - ESP Vocabulary: tools, verbs, materials - CLIL Task: Build & describe a paper tower	Tech Quarter Walking Tour (Google, Meta, etc.) Task: Directions & describing tech hubs (photo scavenger hunt)
Tue	Workshop 1 – Scientific Method - Eco water filter experiment (biology/chemistry) - ESP: Reporting results	Writing Task: Lab Report Cause-effect linking & peer review
Wed	Workshop 2 – Robotics & Coding - Build & program a Microbit robot - ESP: coding commands	Logic Maze Challenge: Program robots to escape
Thu	Workshop 3 – STEM Storytelling - Explain DNA, renewable energy, AI - ESP: Language for science videos	Video Production Project Create & subtitle a 2-min explainer video
Fri	Guest Speaker – Dublin STEM start-up founder Prepare & conduct English Q&A	Cultural Visit: National Museum of Ireland Explore Irish scientific heritage, innovations, and diaspora contributions

Week 2

Day	Morning (9:00 – 12:15)	Afternoon (13:45 – 17:00)
Mon	Workshop 4 – Design Thinking - Challenge: "How to make Dublin greener?" - CLIL focus: Modals, imperatives, persuasion	Prototype Development Eco-solutions with recycled materials
Tue	Environmental Workshop: Phoenix Park Visitor Centre Explore sustainability & biodiversity	Language Journal & Reflection on environmental innovation
Wed	Workshop 5 – IoT & Sensors - Arduino/microbit + motion sensor build - ESP: Giving clear instructions	Team Challenge: Build and present IoT prototype
Thu	Innovation Workshop – Trinity College - Explore Irish research themes (e.g. biotech, AI, clean tech) - Language for innovation & science	Roleplay Activity: "Explaining a lab or innovation" STEM interview simulation
Fri	Final Presentations Group pitch: STEM innovation (video/prototype)	STEM Hackathon Quiz + Certificate Ceremony

Please note: This programme represents a sample schedule and activity set. The final content may vary depending on group interests, seasonal availability, and operational factors. ISE reserves the right to make changes if necessary to ensure the quality and feasibility of the experience.



HIGHLIGHTED STEM + ESP + CLIL ELEMENTS

Hard CLIL

- Robotics, Arduino, eco-filtration (engineering)
- Real-world labs & experiments
- Design Thinking for real-world challenges

Soft CLIL

- STEM vocabulary & sentence frames
- Functional ESP: lab reports, presentations, surveys

ACTIVITIES SNAPSHOT

- STEM Explainer Video Challenge
- Mini Hackathon (logic, coding, math)
- Tech Company Roleplay Interview
- Public Survey on "AI and Future Jobs"
- STEM Debate: "Is AI more dangerous than beneficial?"



EVALUATION & OUTPUTS

Type	Description
Continuous Tasks	Vocabulary journal, lab reports, peer reviews
Project Work	Final group prototype + English pitch
Competitions	Maze challenge, STEM Kahoot, video contest
Showcase	Presentation to "STEM Jury" + certificates

LEARNING OUTCOMES

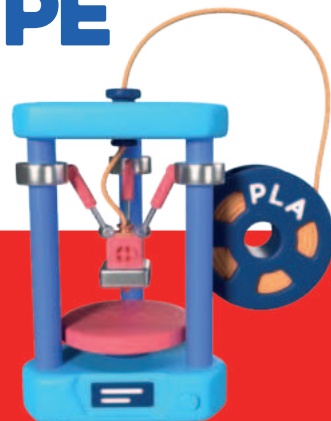
- Communicate STEM concepts confidently in English
- Apply scientific reasoning in practical challenges
- Improve 21st-century skills: critical thinking, collaboration, creativity, communication
- Experience real-world innovation ecosystems
- Produce tangible outputs: prototypes, posters, explainer videos



THEME

DIGITAL CONCEPT TO PHYSICAL PROTOTYPE

CREATIVITY, INNOVATION & STEM SKILLS



Duration: 2 weeks | 30 hours total

Target: Vocational/technical school students (15–19)

Level: B1 CEFR and above

Location: Dublin

Approach: CLIL • Project-Based Learning • ESP • Task-Based Learning

THE PEDAGOGICAL FRAMEWORK

This PCTO programme offers a complete immersion into the world of 3D printing technology and digital modelling.

Students gain hands-on experience with **FDM 3D printers**, learn how to design 3D models using browser-based CAD software (OnShape), and transform their ideas into tangible prototypes.

The course applies **hard CLIL** through technical training (hardware operation, software use, design and slicing techniques) and **soft CLIL** through the integration of STEM English — vocabulary, functional phrases, technical documentation, and presentations.

Throughout the two weeks, students follow a **full design-to-print workflow**, from concept creation and digital modelling to physical printing, post-processing, and final presentation to a “STEM Jury.” This process fosters **21st-century skills** — creativity, critical thinking, collaboration, and communication — in a truly international context.

HIGHLIGHTED STEM + ESP + CLIL ELEMENTS

- 3D Printer Operation & Maintenance
- Digital Modelling & CAD Terminology
- Group Project: original design from concept to print
- Integration of design thinking and technical English
- Functional ESP: design briefs, troubleshooting logs, oral presentations

LEARNING OUTCOMES

- Operate an FDM 3D printer, including assembly, calibration, and maintenance
- Use CAD tools to design and edit 3D models
- Apply slicing techniques and optimise print settings for quality and efficiency
- Troubleshoot common printing errors and propose solutions
- Use English confidently to explain technical processes, present ideas, and answer questions
- Collaborate effectively in an international project environment



SAMPLE PROGRAMME – 2 WEEKS

Week 1

Day	Morning (9:00 – 12:15)	Afternoon (13:45 – 17:00)
Mon	Orientation & English for STEM • Introduction to 3D Printing: types (FDM, resin) & applications • ESP Vocabulary: parts, tools, and materials	Practical Workshop: • 3D Printer Components & Assembly • Adjustments and calibration
Tue	Operating the Printer • Interface and controls • File importing and preparation	Practical Printing: Print bed levelling, nozzle types, basic maintenance
Wed	Introduction to Digital Modelling • Overview of modelling software & libraries	OnShape Basics: • Sketches, dimensions, and views • Practice with simple models
Thu	Reading Technical Drawings • Modelling techniques for complex shapes	Slicing fundamentals: infill, layer thickness, time vs. quality
Fri	Troubleshooting common printing errors	Dublin Innovation Visit: Tech hub with prototyping lab

Week 2

Day	Morning (9:00 – 12:15)	Afternoon (13:45 – 17:00)
Mon	Group Project Launch: Define original model idea & design brief	Workshop: independent modelling in OnShape with teacher feedback
Tue	Advanced Modelling Techniques: Modular parts, connectors, complex surfaces	Slicing & print preparation of project models
Wed	Mid-Project Review: Feasibility check & technical adjustments	Begin printing project components (continuous printing schedule)
Thu	Post-Processing & Finishing: Sanding, assembly, functional testing	Rehearsal of project presentations (technical vocabulary practice)
Fri	Final Presentations to “STEM Jury”	Showcase, peer feedback, and Certificate Ceremony

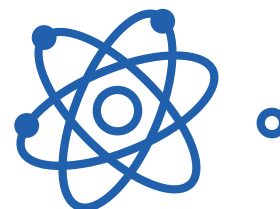


PRICING

Number of Students	6 nights / 7 days	7 nights/ 8 days
15–29	€440 net	€480 net
30–40	€420 net	€460 net
45+	€415 net	€450 net

Supplements:

- €40 per week for dietary needs (vegetarian, vegan, gluten-free, etc.)



INCLUDED IN THE PACKAGE

- Return airport transfers (all passengers on the same flight)
- Full board host family accommodation (2–4 students per home)
- 30 hours of STEM-related PCTO activities (workshops, visits, and project work)
- Online placement test and pre-arrival information pack
- End-of-course certificate
- Orientation walking tour with ISE staff
- Bespoke cultural programme to explore Dublin and Ireland
- Leap Card for public transportation during the stay

*Leap Card: All packages include a Leap Card: 7-day for 6- or 7-night stays, and 14-day for 2-week stays. Extra travel days: €8 per additional day.

GROUP LEADER RATES (6 NIGHTS)

Accommodation	Rate
Host family (single, full board)	€300
Hotel / B&B	From €900

Hotel rates vary by availability and choice

- **7-night supplement:** €50 for single host room
- **Alternative accommodation transfer supplement:** €125 each way
- **7-days Leap Card:** €30

This programme can be tailored to suit your group's language level, STEM focus (e.g. AI, biotech, sustainability), or visit preferences.





@ISEIreland



@iseireland



+353 16219039



info@iseireland.ie



www.iseireland.ie



ISE CERTIFICATIONS & CREDITATIONS

