

STEAM Methodology

Teacher Training Course

Planning and delivering project-based STEAM lessons to young learners

This course is for teachers in primary schools, middle schools and high schools who wish to explore the methodology behind STEAM based lessons and courses.

This practical course looks at engaging, collaborative and interactive activities that teachers can use to create cross-curricular lessons that focus on STEAM subjects (Science, Technology, Engineering, the Arts and Maths). This course specifically focuses on the effective set up, delivery and assessment of project-based lesson content and how it can encourage learner autonomy and 21st Century Skills.

Teachers will explore the theory and methodology behind STEAM learning. By the end of the course, they will have a better understanding of how to combine STEAM subjects using real life problems and current topics of interest. Teachers will explore discovery and inquiry-based teaching and project-based learning in order to plan and deliver lessons that encourage learner autonomy and stimulate curiosity in their students.



Project Work

Teachers are set assigned project work at the end of each day. They are set a maximum of 10 hours of project work per week, which they carry out over the week. The aim of the project work is to encourage teachers to research various aspects of STEAM methodology, tasks and subjects and then put this research into practice by planning a full STEAM lesson with materials to be presented or delivered at the end of the course. Teachers will work in groups of 4 or 5 to plan, write material and team teach at the end of the course.

English Level:

Applicants to this course must have a minimum B2 level of English, as outlined in the Common European Framework of Reference for Languages.

Format:

In-person training carried out in our Dublin City Centre school, delivered by our experienced teacher trainers. International classes for the dates below. Closed group can be offered at any date through the year.

Course Length:

20 hours in-person training + 10 hours project work

Course Duration:

Full time - 30 hours over 1 week. Course may be in the mornings or afternoons.

Final Certificate:

30 certified hours per week

For dates and fees chart please click here -

[ATC Courses for Teachers.](#)

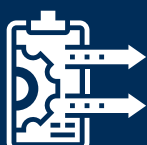
THE MAIN AIM OF THIS COURSE IS TO HELP TEACHERS:



Plan STEAM lessons that will suit their particular subjects and learner needs while ensuring a cross-curricular focus



Understand how to integrate digital literacy, sustainability, inclusion and diversity into project-based STEAM lessons and materials



Develop materials, select digital resources and design activities which are engaging and motivating for students



Focus on learner autonomy, project-based learning and deliver STEAM lessons in a student-centred way

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Sample 1 Week Course Overview

<p>Day 1 STEAM Overview</p>	<p>In this session the trainer will help the teachers understand the basic methodology behind STEAM. Teachers will have the opportunity to create their own mini lesson based on the new methodology they are introduced to during Day 1.</p>	<p>Focus on Digital Literacy, Inclusion and Diversity</p>
<p>Day 2 Combining STEAM Subjects</p>	<p>In this session teachers will take a closer look at the subjects of Science (biology, chemistry and physics) Technology, Engineering, the Arts and Maths. They will look at sub-topics within these subjects and work together to make links between subjects. They will also analyse how sub-topics from these subjects can be combined to create well-balanced STEAM lessons.</p>	<p>Focus on Digital Literacy, Sustainability Inclusion and Diversity</p>
<p>Day 3 A Deeper Investigation into Methodology and Tasks</p>	<p>The aim of Day 3 is to take a closer look at Discovery/ Inquiry Based Learning and Project-Based Methodology. They will have the opportunity to analyse authentic ATC STEAM material with this methodology in mind. The Teachers will then have the opportunity to create STEAM tasks that are engaging, student centred and encourage research and curiosity in learners. They will then apply these types of tasks to their project work, moving towards completing their full lesson plan and materials.</p>	<p>Focus on Inclusion and Diversity</p>
<p>Day 4 Teaching STEAM online and using online tools effectively</p>	<p>This session focuses on the difference between delivering a STEAM course in a face-to-face setting and delivering it online. The teachers will investigate online teaching via different platforms along with digital tools and software that help to keep online lessons interactive, communicative and engaging.</p>	<p>Focus on Digital Literacy, Inclusion and Diversity</p>
<p>Day 5 Trainer Directed Preparation Team Teaching Presentations of Planned Lessons and Material</p>	<p>Teachers will use the first part of this session to complete the final aspects of their lesson plan and materials. Trainers will direct teachers in this preparation and help them with any last-minute questions or changes to their materials. The second part of this session will be dedicated to the team-taught delivery of the STEAM lesson teachers have developed during the project work of the course.</p>	<p>Focus on Digital Literacy, Sustainability Inclusion and Diversity</p>

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Learning Objectives

By the end of the course teachers should:

- Have a clear understanding of the theory of discovery and inquiry-based teaching and project-based learning.
- Have a clear understanding of the methodology behind STEAM.
- Know how to combine STEAM subjects using real life problems and current topics relevant to their students' interests and identities.
- Be able to plan and deliver engaging, collaborative and interactive STEAM lessons with a cross-curricular focus.
- Understand how to integrate digital literacy, sustainability, inclusion and diversity into project-based STEAM lessons and materials.
- Be able to develop materials, select digital resources and design activities which are engaging and motivating for students.
- Be able to assess project-based content.
- Use digital tools with confidence to deliver STEAM lessons online.
- Encourage and foster student autonomy by providing students with opportunities to reflect on what and how they are learning.