

March 2025

Dear Parents and Students,

The school, in partnership with Brainzie Ltd, is delighted to offer our students a unique opportunity to learn about **professional** software development.

There are many online platforms and programmes that introduce children (and adults) to this topic but most of them oversimplify things and do not teach the skills that allow professional software developers to build real websites and applications.

In this course, Rodolfo Grave from Brainzie Ltd will take the lucky students accepted into the course from zero to basic on several topics and skills required for developing software that can be used in the real world.

Sessions will be held every Wednesday at 3.30pm (right after school) in computer lab C4, starting on **Wednesday 23rd April** with the last session on Wednesday 16th July, a total of 12 sessions. Each session will last 90 minutes, ending at 5.00pm.

No previous knowledge of programming is required. Only basic computer skills, typing and handling a mouse, plus lots of enthusiasm and interest are needed.

Students are encouraged to use the computers in the lab, which will be preconfigured with everything they need, but they are free to bring their own laptops. The laptops will have to be Windows laptops (not Chromebooks) with enough processing power to compile programs.

Price: £126 (£10.50 per session - about £7 per hour, which is similar to AMBIT sessions).

Location: Townley Grammar, Computer Lab C4

When: Every Wednesday at 3.30

There are 27 spaces available, allocated on a first come, first served basis.

Please, see the full curriculum and more details below:

Goals

1. Introduce students to Software Developer as done by professionals, avoiding common oversimplifications, e.g., blocks + drag & drop.
2. Introduce students to several IT concepts that are required to build real software: networks, servers, DNS, HTTP and HTTPS, browsers, HTML, CSS
3. Introduce students to programming a web system.
4. After completing the course, students should be able to build simple websites and publish them*, and have enough knowledge to continue learning on their own.

Course Curriculum

1. Weeks 1 & 2: Introduction to Software Development via spreadsheets: variables, references, functions.
2. Weeks 2, 3, 4, 5: Introduction to C# and Visual Studio:
 - a. Basic programming principles and constructs (conditionals, loops, variables, scopes)

- b. Types by reference and by value.
 - c. Building a simple Console app with basic input and output.
 - d. Building a command line calculator.
3. Weeks 6 & 7: Basic networking, HTTP, HTTPS, browsers.
4. Weeks 7, 8: Building our first static web page with HTML and CSS.
5. Weeks 9, 10, 11, 12: build a simple Blazor app. **If there's time**, we will learn how to deploy it and make it available on the internet.

Requirements

One Windows PC per student, with Visual Studio 2022 Community Edition installed (I can install it if necessary but is a process that can take about 30 mins so it would have to be done before the sessions start). If someone else is going to do it, ask them to please reach out for specific instructions as there are a lot of options when installing it.

About the instructor

Rodolfo Grave is a software developer with over 20 years of experience building software. Today, Rodolfo is the CTO of emsurge and, using the very same tools you will be using in this course, he leads his team in building a platform to facilitate the trading of Carbon Offset Credits - an important tool to combat climate change.

For over a year now, he has been delivering the STEM Club as part of Townley's AMBIT programme.

He has also founded Brainzie Ltd as a vehicle to deliver educational content to anyone interested.