Lyceum Alpinum Zuoz
Swiss International Boarding School

TECHSPARK ACADEMY
Get digital

International Summer Camp
Digital skills

General camp set up and computers

The digital skills workshop takes place on 9 mornings, 3.5 hours a day. Students are asked to bring their own computers. Please do not forget to bring a charger and an electric converter for your computer.

On the first day, the whole group will meet to go through the basics of e-safety.

Which computers? All digital skills courses run on the vast majority of commercially available computers, with a preference for computers with 8GB of RAM or more. If you are buying a new computer, Microsoft's Surface may be a good option.

Knowledge required and Levels: The camp is suitable for students with all levels of digital knowledge. Learning takes place in small groups, and **everyone gets to work on individual tasks suitable for their level**.

Students complete an **initial computational skills assessment**, which enables our team at TechSpark Academy to tailor the hands-on activities to each student's current level. The assessment is a short, non-intimidating Q&A designed to gauge coding readiness. It adapts in real time and ends once a student begins to consistently answer questions incorrectly, ensuring the experience remains supportive and confidence-building.

So if you have already done Python, don't worry, we have material at many different levels to keep you interested and challenged!

Languages: The camp is taught in English, the language of code. As the instructors are bilingual, specific questions can be discussed in German and French too.

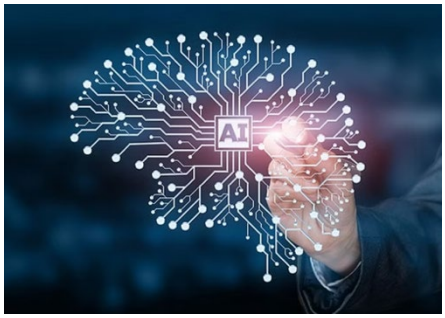
Four course options: AI, AI & Innovation, coding and robotics

1. Discover AI: From chatbots to creative machines

Dive into the exciting world of artificial intelligence (AI) with our latest course designed specifically for 10–17-year-olds. This option takes students on a journey through various types of AI, with a special focus on Large Language Models, and with an overview of Python code. Through interactive lessons and hands-on projects, students will learn how AI powers chatbots, generates creative content, and solves real-world problems. No prior coding experience is needed. Join us to discover the future of AI and how you can be a part of it.

More about Artificial Intelligence and Python

Artificial Intelligence is a technology that allows machines to think and learn like humans. Large Language Models (LLMs), like ChatGPT, use code to understand and generate human language. These AIs power chatbots, create stories, and solve problems, making our lives easier and more connected by using complex programming. Python, a popular programming language, is widely used in AI for writing the code that makes these intelligent systems work.

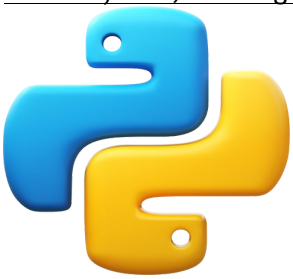


2. Future ready: AI and Innovation Lab (NEW in Zuoz!)
Step into the future with this dynamic course designed for 10–17-year-olds eager to explore innovation and AI. The course is evenly divided between learning the Lean Startup approach—where students practice turning ideas into projects through creativity, teamwork, and rapid iteration—and exploring how AI drives breakthroughs in design, science, and problem-solving.
Through hands-on activities and collaborative challenges, students will gain the tools to innovate and imagine solutions for tomorrow. No prior coding experience is required—just curiosity, creativity, and an interest in entrepreneurship

More about the Lean Startup Innovation Approach
Created in Silicon Valley and shaped by research at Stanford, the Lean Startup approach helps entrepreneurs turn ideas into real projects. Its core principle is simple: learn fast, adapt quickly, and keep improving. By testing ideas with potential customers and building step by step based on their feedback, teams avoid wasting time and resources. The goal is to move from idea to innovation through continuous learning and creativity.

3. Create your own digital game with Python: Explore the leading computer language
Students are introduced to computational thinking and coding using Python, one of the most popular professional programming languages on the market. Python is easy to pick up, whether a student is a newly minted programmer or experienced with other languages. Teens will enjoy writing short programs with Python, work on group exercises, and then build a game of their choice. For students with less programming experience, we start with Scratch and Python block code and then move on to Python.

About Python, the language of Instagram, YouTube & Google's search engine

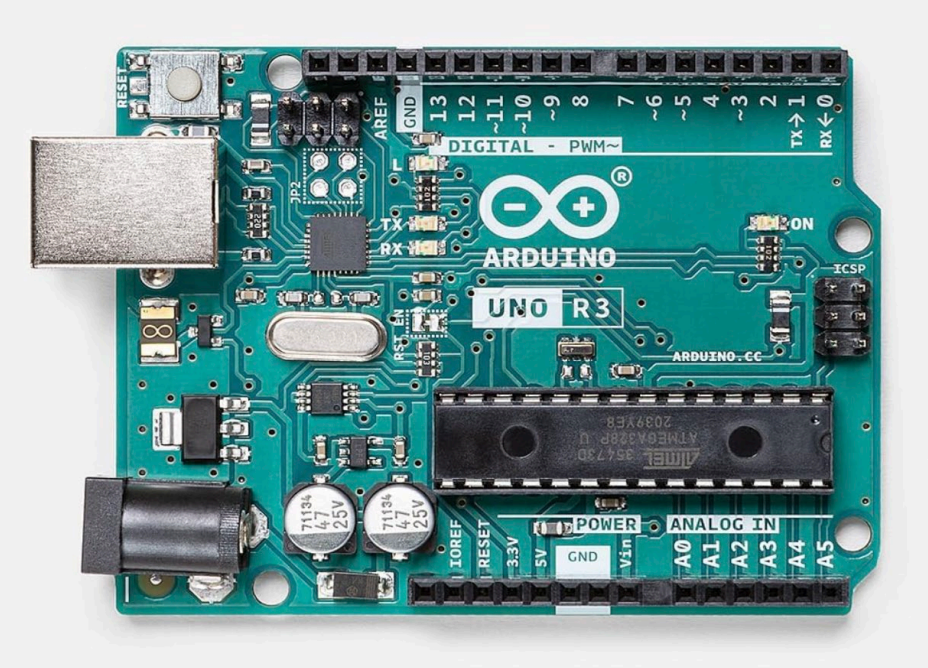


Widely used by programmers, designers and game developers, Python has rapidly become one of the most popular programming languages. Whatever your interests, Python is a great way to prepare for university education, as it is now taught not only in all science and engineering faculties, but also in finance, business and economics. Python is powerful and fast. It plays well with others, it runs everywhere, is friendly and easy to learn, and is open. www.python.org/about

About Scratch, MIT's introduction to computer science
For students with less programming experience, we start with Scratch. Scratch is a programming language and an online community where children can program and share interactive media such as digital stories, games, and animation with people from all over the world. As children create with Scratch, they learn to think creatively, work collaboratively, and reason systematically. Scratch is designed and maintained by the Lifelong Kindergarten group at the MIT Media Lab.
https://scratch.mit.edu

4. Robotics with Arduino: Build and program your own robot!
Robots have an increasing presence in our daily lives. Whether a student is interested in digital intelligence or is a fan of Star War's R2-D2, this course will allow him/her to build a robot and then learn hands-on robotic programming with "Arduino", a very popular robot programming language.

About Arduino Microcontroller for Robots
Arduino is an open-source platform based both on a microcontroller board and a development environment, which will enable the user to write code to interact with the environment. Be it a simple blinking LED or a more complex line-follower obstacle-avoiding robot, Arduino can do it!
www.arduino.cc/en/Guide/Introduction



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FAQ Digital Skills programme

1. Do you offer different levels within the Digital Skills programme?

Absolutely. Students complete an initial computational skills assessment, which enables our team to tailor the hands-on activities to each student's current level.
The assessment is a short, non-intimidating Q&A designed to gauge coding readiness. It adapts in real time and ends once a student begins to consistently answer questions incorrectly, ensuring the experience remains supportive and confidence-building. We run Python courses on four different levels, from beginner Level 1 to level 4.

2. What level of programming is covered (languages, platforms, tools)?

We offer Python courses across four levels, from Beginner (Level 1) through to Level 4. Students learn through hands-on coding projects that progress from simple tasks to highly advanced applications. There is no fixed limit to the sophistication or complexity of projects a student can undertake if they are ready for the challenge.

Programme overview:

Language**:** Python. We teach not only Python syntax but also core algorithmic thinking skills that can be transferred to other programming languages.

Platform**:** Students code in Jupyter Notebooks using Google Colab.

Tools and learning approach:

- Structured exercises, pre-prepared coding challenges (with solutions), and reference "cheat sheets."
- Short, focused thematic lessons with an emphasis on practice and 1:1 instructor support when needed.
- Interactive Kahoot quizzes to reinforce algorithmic thinking and Python syntax in an engaging way.
- Fun Kahoots validating algorithmic thinking and Python syntax intersperse thematic sessions to the delight of students who love these challenges
- More advanced students can work on Microsoft's Git Hub code sharing platform

For more information on levels, scroll down to the bottom of our Python page here:
online.techsparkacademy.ch/python-course

3. How advanced is the robotics component?

The robotics course is designed to be accessible to a wide range of students, including those with no prior experience. Students build an Arduino-powered robot from the ground up using readily available components, learning both the hardware and programming fundamentals along the way. For students who want to go further, there are clear opportunities to increase the level of sophistication—such as improving speed and performance, adding sensors or features, and writing more advanced code to enable more complex autonomous behaviour.

4. Which of the four programmes is the most mathematical?

Python is the most mathematical of the offered courses. Python has a lot of coding and math. Discover AI also has many python coding projects which are quite mathematical too. Discover AI gives an excellent overview of all key AI concepts, a lot of Python AI projects