JUNIOR COMPUTER ACADEMY EDUCATIONAL PROGRAM

NOVA it academy

level 1

1. **DIGITAL SKILLS & AI BASICS** — Students will be able to use core computer tools confidently and apply AI tools safely and effectively.
2. **WEBSITE & PRESENTATION DESIGN** — Students will be able to design and publish their own website and presentations using Canva.
3. **MICROSOFT OFFICE ESSENTIALS** — Students will be able to create documents, spreadsheets and presentations using Word, Excel and PowerPoint.
4. **ROBOTICS WITH LEGO** — Students will be able to construct and program LEGO robots and take part in robotics competitions.
5. **3D MODELING & PRINTING** — Students will be able to design 3D models and prepare them for printing.
6. **MINECRAFT EDUCATION** — Students will be able to use AI tools and coding features within Minecraft Education to build interactive worlds.
7. **GAME CREATION WITH MAKECODE** — Students will be able to design and code their own games using block-based programming.

level 2

1. **UNDERSTANDING AI: ETHICS & BIAS** — Students will be able to identify and explain real cases of bias and fairness issues in AI systems.
2. **BUILDING APPS AND GAMES WITH AI** — Students will be able to build and launch a working app using AI tools, without traditional coding.
3. **PYTHON PROGRAMMING — JUNIOR** — Students will be able to construct and program LEGO robots and take part in robotics competitions.
4. **PROGRAMMING A HUMANOID ROBOT** — Students will be able to program a robot's movement, speech and gestures.
5. **DRONE PROGRAMMING** — Students will be able to write flight paths and basic autonomous behavior for a real drone.
6. **VIRTUAL REALITY WORLD BUILDING** — Students will be able to design and build their own interactive VR environments.

level 3

1. **ELECTRONICS & CIRCUITS (ARDUINO)** — Students will be able to design and simulate electronic circuits using Arduino and Tinkercad.
2. **INTRODUCTION TO MACHINE LEARNING** — Students will be able to train and evaluate simple machine learning models.
3. **DATA ANALYSIS** — Students will be able to organize, analyze and visualize data using spreadsheets.
4. **COMPUTER VISION: TEACHING COMPUTERS TO SEE** — Students will be able to build a system that recognizes and responds to real objects through a camera.
5. **PYTHON PROGRAMMING — INTERMEDIATE** — Students will be able to build more advanced programs and apply core programming concepts.
6. **2D ANIMATION** — Students will be able to create their own animated stories and characters.

level 4

1. **FILMMAKING WITH AI TOOLS** — Students will be able to produce a short film using AI-assisted script, storyboard and video generation.
2. **GAME DEVELOPMENT WITH UNREAL ENGINE** — Students will be able to design and build multi-level games using Unreal Engine.
3. **INTRODUCTION TO QUANTUM COMPUTING** — Students will be able to explain and simulate the basic principles behind quantum computing.
4. **PYTHON & ARTIFICIAL INTELLIGENCE** — Students will be able to apply Python to build and understand AI-driven projects.
5. **BUILDING GADGETS WITH ARDUINO** — Students will be able to design and construct their own electronic devices.
6. **CYBERSECURITY: ETHICAL HACKING & DEFENSE** — Students will be able to identify and defend against real security vulnerabilities in a safe, controlled environment.

level 5

1. **FINAL PROJECT**
2. **GAME DEVELOPMENT WITH UNITY** — Students will be able to design, build and launch a complete game as part of a team.
3. **START UP AND FREELANCE** — Students will be able to plan, market and launch their own business or freelance venture.
4. **INNOVATIVE TECHNOLOGIES** — Students will be able to work with emerging AI, robotics and smart-device technologies.
5. **ADVANCED ROBOTICS & AI VISION** — Students will be able to program autonomous robots that use AI to see and respond to their environment.

- 1 class - 2 hours
- 1 level – 36 classes
- Maximum level of practical knowledge
- IT-industry career test drive
- Project-based approach