**Course Description**

### **Module 1**

**Introduction to the Program and Basic Theoretical Concepts (48 hours)**

1. **Theoretical Understanding of Basic Concepts:** Machine Learning, Sustainability, Culture, and STEAM – Evangelia Michailidou
2. **Connecting Machine Learning and Sustainability** – Evangelia Michailidou
3. **Connecting Machine Learning and Culture** – Evangelia Michailidou
4. **Legislation on the Use of New Machine Tools and Bioethics** – Evangelia Michailidou

### **Module 2**

**Robotic Tools as Part of Machine Learning (96 hours)**

1. **Lego Robotic Tools: From Preschool to Adult Education** – IFigenia Kritikou
2. **Ministry Robotic Tools (Polytech): From Preschool to Adult Education** – IFgenia Kritikou
3. **Micro:bit and Arduino Robotic Tools: From Preschool to Adult Education** – IFigenia Kritikou
4. **Integration of Robotic Tools in Kindergarten Teaching: Creating Projects Based on the New Curriculum** – IFigenia Kritikou
5. **Integration of Robotic Tools in Elementary School Teaching: Creating Projects Based on the New Curriculum** – IFigenia Kritikou
6. **Integration of Robotic Tools in Secondary Education: Creating Projects Based on the New Curriculum** – IFigenia Kritikou
7. **Integration of Robotic Tools in Teaching Students with Learning Difficulties: Creating Projects Based on the New Primary & Secondary Curriculum** – IFigenia Kritikou
8. **Integration of Robotic Tools in Special Education** – Zoi Souliotou

### **Module 3**

**Other Types of Machine Learning (99 hours)**

1. **Operational Issues of Interactive Whiteboards** – IFigenia Kritikou
2. **Teaching with the Use of Interactive Whiteboards** – IFigenia Kritikou
3. **Artificial Intelligence in the Educational Process** – Zoi Souliotou
4. **Creating Digital Storytelling and Integrating It into the Educational Process** – Zoi Souliotou
5. **3D Printing and Teaching Natural Sciences** – IFigenia Kritikou
6. **Introduction to and Creation of Digital Learning Objects (DLOs): The New School Textbooks (Multiple Books, Curriculum)** – IFigenia Kritikou
7. **Gamification, STEAM: Online Knowledge Games, Platforms, Creation, and Pedagogical Utilization** – IFigenia Kritikou
8. **Development of Teaching Scenarios and Assessment Methods: AI as a Tool for Educators (ChatGPT, Canva, Genially, etc.)** – Evangelia Michailidou
9. **AI as a Tool for Autonomous Learning and Self-Assessment (ChatGPT as a Tool for Students and Parents)** – Evangelia Michailidou

### **Module 4**

**Integration of Machine Learning in Sustainability and Culture (72 hours)**

1. **Museum Education and Machine Learning (Digital Storytelling/Tours): Creating Modern Educational Programs** – Chara Kanari
2. **Machine Learning and Music** – Chara Kanari
3. **Digital Drawing (Drawing Without Talent) / Autodesk Sketchbook** – IFigenia Kritikou
4. **Discovering My Local Area: Digital Tours, Large-Scale Treasure Hunts as a Motivation for Walking** – Chara Kanari
5. **Development of New Skills: Citizens of Tomorrow (Robotics, Everyday Life, and Sustainable Habits) / Sustainable Digitalization** – Evangelia Michailidou
6. **Machine Learning as a Basis for the Evolution of the Primary Development Sector (Creation and Construction of Innovative Devices)** – Evangelia Michailidou

### **Module 5**

**Citizenship and Active Citizen Initiatives Through Technology (84 hours)**

1. **The Role of Technology in Shaping Environmental Awareness (Eco-Informatics)** – Evangelia Michailidou
2. **Digital Skills and the Transition to Sustainability (GreenComp: Empathy, Awareness, Protecting the Planet)** – Chrysanthi Charatsari
3. **Developing Green Skills (GreenComp: Acting Together)** – Chrysanthi Charatsari
4. **Using Technological Tools for Civic Engagement: Creating Social Intervention Programs** – Evangelia Michailidou
5. **Competition Conditions Among Students: Advantages and Disadvantages (Student Robotics Competitions)** – IFigenia Kritikou
6. **Safe Internet: Commitment, Rules, and Protection** – IFigenia Kritikou
7. **Socialization, Free Play, and Digital Media** – Iphigenia Kritikou

### **Program Evaluation (15 hours)**

1. **Reflection on the Topics: Creating a Final Project Combining Sustainability, Culture, and Technology** – Evangelia Michailidou
2. **Presentation of Results and Activities: Awards for Distinguished Projects, Presentation of Best Practices, Program Evaluation, and Suggestions for Improvement** – IFigenia Kritikou