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# FACILITATE-AI

GUIDELINES FOR FACILITATING THE LEARNING OF ARTIFICIAL INTELLIGENCE  
BY SCHOOL STUDENTS OF GRADES 7-12

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Project title:

## **FACILITATE – AI: Guidelines for facilitating the learning of Artificial Intelligence (AI) by School Students of Grades 7-12**

Reference Number: 2021-1-CY01-KA220-SCH-000032567

### **C1 Training course: Training on Artificial Intelligence (AI) content for adapting to school curricula**

#### **Result 1, A1/T1**

**Module Number and Area/ Topic:** Module 6. Training the AI System (rename to)-> *Building an AI model*

**Module owners:** GR-IASA P6, PT-Univ P2, GR-Doukas P7

#### **Introduction and Broad Description of the Context and Goal of the area/ topic addressed:**

This module will provide introductory knowledge on how to build an AI model including training, validation and testing tutorials and familiarization with APIs for python coding.

**Learning outcomes and learning objectives** are described in each of the five following parts of this module:

Part 1- **Introduction to Machine Learning**

Part 2- **Introduction to Neural Networks**

Part 3- **Machine Learning Algorithms**

Part 4- **API for python coding**

Part 5- **Build an AI model example**

#### **Instruments/ Tools/ Supporting Material/ Resources to be used:**

1. "Artificial Intelligence resource package"  
<https://www.stem.org.uk/resources/collection/459311/artificial-intelligence-resource-package>
2. "Enabling children and beginning programmers to build AI programs"  
<https://ecraft2learn.github.io/ai/#sample-programs>
3. "Educational AI resources for children" <https://machinelearningforkids.co.uk/#!/links>

<b>Part 1- Introduction to Machine Learning</b>	
<b>Learning Objectives</b>	Understand the basic concepts of Machine Learning
<b>Learning Outcomes</b>	Understand how a ML model can sort images
<b>Activities</b>	1.1 What is machine learning? 1.2 How do machines learn? 1.3 Cats and dogs

<b>Part 2- Introduction to Neural Networks</b>	
<b>Learning Objectives</b>	Understand the basic concepts of Neural Networks
<b>Learning Outcomes</b>	Understand what is a Neural Network
<b>Activities</b>	2.1 What is a neural network?

<b>Part 3- Machine Learning Algorithms</b>	
<b>Learning Objectives</b>	<ul style="list-style-type: none"> <li>● Understand the difference between supervised and unsupervised learning</li> <li>● Understand basic machine learning algorithms</li> </ul>
<b>Learning Outcomes</b>	Understand what is a Neural Network
<b>Activities</b>	3.1 What is a neural network?

<b>Part 4- API for python coding</b>	
<b>Learning Objectives</b>	<ul style="list-style-type: none"> <li>● Familiarize with APIs for python coding</li> </ul>
<b>Learning Outcomes</b>	<ul style="list-style-type: none"> <li>● Basic use of a python coding API</li> </ul>
<b>Activities</b>	4.1 Write your own python code

<b>Part 5- Build an AI model example</b>	
<b>Learning Objectives</b>	Understand the following concepts of building an AI model: <ul style="list-style-type: none"> <li>● Data pre-processing</li> <li>● Training</li> <li>● Validation</li> <li>● Testing</li> </ul>
<b>Learning Outcomes</b>	<ul style="list-style-type: none"> <li>● Understand how to build an AI model</li> </ul>
<b>Activities</b>	5.1 Build an AI model example