DeCAIR:

Developing Curricula for Artificial Intelligence and Robotics

Python Training Course Report

Course Organization

Lecture	Content
1	**Python installation** – Jupyter Notebook and Google Colaboratory – Variables and Expressions – Language keywords and statements – Operator precedence – Types of variables and conversion – Comments and indentation – Conditional execution and comparison operators – try/except – functions – built-in functions – user-defined functions – arguments and parameters – return values – loops and iterations – strings and string library – lists, tuples and dictionaries
2	**Basic image manipulation with matplotlib and scipy** - Introduction to OOP – Classes, methods, properties, objects – basic python objects – object life-cycle – encapsulation, inheritance, polymorphism
3	**Numpy**- installation, arrays, slicing, array operations, filtering, basic linear algebra, iterations, simple function plotting with arrays
4	**Pandas**- installation, Series, DataFrame, dataframe creation, dataframe description, plotting and sorting, index manipulation, selection, filtering and pivoting, dealing with missing data, importing data from files, using lambda functions, groupby aggregation. Basic additional plots with Seaborn.
5	**Matplotlib and Seaborn**- anatomy of figures, line plots and plot customization, scatter plots, subplots, plot annotation, meshgrid, contour plot, exporting figures, animated 2D and 3D plots, histogram, pairplot, jointplot, violinplot

Date	Time
Monday July 26th	3:00pm – 6:00pm (Amman Time)
Wednesday July 28th	3:00pm – 6:00pm (Amman Time)
Friday July 30th	3:00pm – 6:00pm (Amman Time)
Monday August 2nd	3:00pm – 6:00pm (Amman Time)
Wednesday August 4th	3:00pm – 6:00pm (Amman Time)

Instructor Short Bio

Alberto Cabri is a professional electronic engineer and a tenured teacher of Computer Science at an Italian public high schools. He got a PhD in Computer Science and Systems Engineering at University of Genova in 2020. He is a co-founder of Vega Research Laboratories, a spin-off of University of Genova, whose mission is design and development of ICT solutions based on disruptive technologies, such as AI and edge computing. He was co-founder and CEO of Flashover Time, Manager in Computer Science Corporation, Project Manager in Marconi Communications and filled various technical positions in Elsag and Cap Gemini
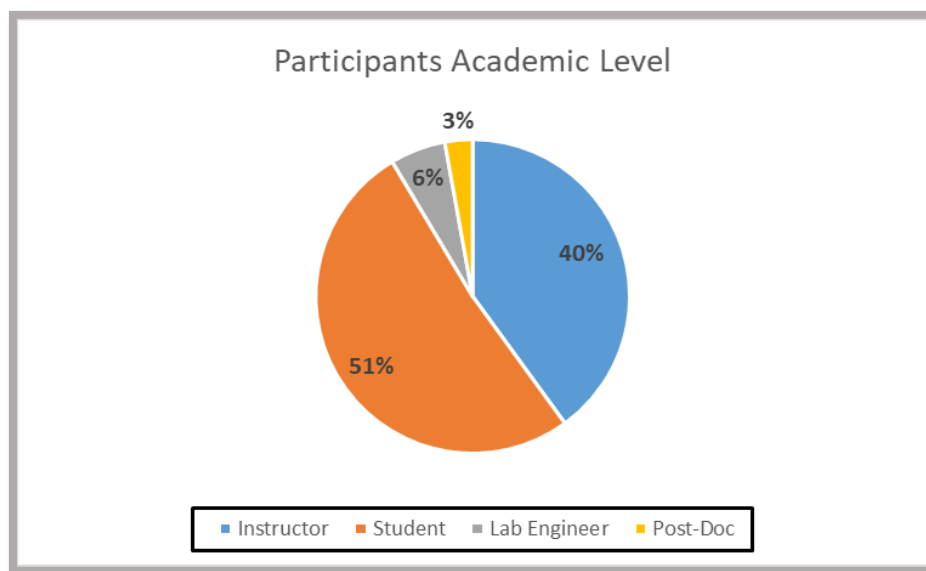
Participants

- The following table shows the distribution of the participants from each participating university.

TTU	20
JU	6
JUST	3
BAU	2
LU	1
Genoa	1
Stuttgart	2
Total	35

Table 1: Number of participants from each University

- The following pie chart shows the participants in the sessions based on their academic level

Notes

- All the sessions are online and offered through zoom meetings
- The material and the lecture recording are made available to the participants directly after each session
- Certificate of attendance have been issued to the participants.