EUROPEAN INSTITUTE FOR ACADEMIC
AND PROFESSIONAL DEVELOPMENT
Creating Space for You to Grow

Your Course: **Python for Data Analysis and Visualization**

Dive deep into Python's power for data analysis and visualization in this immersive course, blending interactive lectures with hands-on exercises. Experience Berlin's vibrant culture while networking with European peers and mastering tools like NumPy, Matplotlib, and Pandas.

General Information:

Date	16 - 20 September 2024 (Monday till Friday)
Teaching units	11 x 90 min
Location	Garda Lake/Italy
Price	695 € + VAT
Maximum Number of Participants	14
Accomodation	not included / self organised *(with EIAPD support)*
Your trainer	Dr. Alexander Britz

Course Description

Embark in the journey to uncover the potential of **Python for Data Analysis and Visualization**, all set at the beautiful northern coast of Lake Garda . Over the span of this course you will master Python core libraries including NumPy, Matplotlib, Pandas and Seaborn. Next to these, you will learn good coding practice, e.g. using version control with Git & Github and working in virtual environments. The course is highly interactive and features a balanced mix of input lectures and hand-on exercises. You will further learn how to exploit AI-based tools to autonomously troubleshoot and advance your coding skills. The course culminates in starting your own data analysis and visualization project, which is complemented by peer-to-peer feedback. Besides learning the technical skills, you will network with Python enthusiasts from all over Europe and enjoy the beautiful landscapes of Lake Garda.

Objectives of the mobility	
	● Understand the capabilities of Python for data analysis and visualization
	● Establish good coding practice, e.g. with version control and using virtual environments
	● Master the well established Python libraries NumPy, Matplotlib, Pandas and Seaborn

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	● Acquire a feeling of effectiveness in solving problems and advancing your skills on your own ● Apply the newly acquired skills in data analysis and visualization to your own projects
Added value of the mobility (in the context of the modernisation and internationalisation strategies of the institutions involved)	Participants will be … ● confident in using Python and therefore be able to adapt to future needs in coding in different (academic) contexts . ● able to develop further on their own and thus adapt to future changes. ● acting as multipliers and share their acquired knowledge in their institution.
Activities	The course will be highly interactive and is split **50/50** into **lectures and exercises**. ● Exercises: You will work in (small) groups on coding tasks and explore them in depth. ● Peer exchange: You will meet, discuss and exchange with other young, aspiring Python programmers. ● Lecture and presentation by instructor: Lecture scripts will be handed out to all participants. Additionally you will have the opportunity to … ● Experience Lake Garda and it's beautiful surroundings ● Network and exchange with colleagues from other European universities. EIAPD will facilitate a session to identify possibilities for further cooperation among participants.
Learning outcome and impact	After the course you will be able to … ● understand of the real-world uses of Python in data analysis and visualization ● maintain version control with Git&Github and use virtual environments ● analyze extensive data sets with Numpy and Pandas ● visualize your data using Matplotlib and Seaborn ● exploit AI-based tools and traditional internet research to advance your programming skills
Target Group and Prerequisites	● Anyone keen on learning analyzing and visualizing data with Python

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	● Prior experience with programming, even if minimal or in a different language, is beneficial but not mandatory. ● You will bring your own laptop to work with

Your Destination: Northern Lake Garda, Italy (Riva del Garda/Arco)

Garda Trentino, located at the northern tip of Lake Garda, with Riva del Garda, Arco and Torbole, offers an exceptional blend of breathtaking natural landscapes, vibrant cultural experiences, and a wide array of outdoor activities, making it a compelling destination for an Erasmus program. With the majestic mountains and the crystal-clear Lake Garda, the region is a picturesque setting that combines natural beauty with a rich historical tapestry.

Further information
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Monday 16 September	Tuesday 17 September	Wednesday 18 September	Thursday 19 September	Friday 20 September
09.00-12.15	09.00-12.15		09.00-12.15	09.00-12.15
- Welcome & Introduction - Example use cases of Python for data analysis and visualization - Brief revision of Python syntax (lecture & exercise) - Virtual environments	- Data treatment with NumPy II (lecture & exercise) - Reading and writing of files (lecture and exercise)	Excursion	- Version control with Git & Github (lecture & exercise) - Analysis of larger data sets with Pandas (lecture & exercise)	- Advanced visualization with Seaborn and Pandas (lecture) - Practice lab: start your own projects - Peer review and Trainer feedback to support and advance your own projects
12.15-13.30	12.15-13.30		12.15-13.30	12.15-13.30
Lunch	Lunch		Lunch	Lunch & Departure
13.30-15.00	13.30-15.00		13.30-15.00	
- Data treatment with NumPy I (lecture & exercise)	- Visualization with Matplotlib (lecture & exercise)	*Individual Learning*	- BONUS: Coding with AI tools	

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