Foundations of Programming with Python

Participant Handbook

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1 WELCOME

Welcome to the start of a new learning journey with Krisolis. We are delighted you are going to join us for our course in **Foundations of Programming with Python** and look forward to working with you. This Participant Handbook is designed to provide you with all the information you will need to successfully complete of your chosen course. Please ensure that you read this document thoroughly.

If you are unable to find the information you require or have any questions which do not appear to be addressed in this document, please contact us at **ecb-learners@krisolis.ie** and we'll be delighted to help you.

2 COURSE DETAILS: WHAT WILL I LEARN?

Duration: 2 Days

Overview: The Python programming language is amongst the most powerful and flexible tools for developing software and data science applications. This course teaches learners with no prior programming experience how to master the basics of the Python programming language.

At Course Completion: After attending this course, learners will know:

- The difference between different coding environments used for Python
- The advantage of using Jupyter Notebooks for analysis projects
- How to write effective Python code
- The different Data Structures in Python and when to use them
- How to correct errors and debug code
- How to use flow control in Python
- How to create user defined functions in Python
- The difference between different programming paradigms such as Object-Oriented programming and procedural programming.

Who Should Attend: This course is aimed at anyone who wants to harness the power of Python in their roles to develop code based applications. No prior programming knowledge is required.

Outline: The course will run over two days and will broadly follow the outline below. The course will be delivered through presentations, real world examples, discussions, and workshops.

Day	Time	Topic
Day 1	Morning	Introduction to Python Programming Environments
		Basic Python Programming
	Afternoon	Data Structures in Python
Day 2	Morning	Flow Control in Python
		Creating User Defined Functions Python
	Afternoon	The Different Programming Paradigms
		Good Programming Practice

3   BEFORE THE COURSE BEGINS - WHAT DO I NEED BEFORE I START?

Before your programme begins, please make sure that you have read through this section completely and that you have all that you require to begin your programme. Please ensure that you have:

- ▪ Read the **programme pre-requisites** and are comfortable that you have the required skill level prior to starting the programme.
- ▪ Gained access to the **correct software** for the programme. For this programme you will require **Python** and **Jupyter Notebooks**
- ▪ Downloaded the **programme materials.**
- ▪ Completed the **pre-programme survey.**

3.1   Course Pre-Requisites

It is the responsibility of each participant to ensure that you meet the prerequisite skill level for this course. This course is designed for the those starting to learn how to program. Before attending this course, learners should:

- • Have a good working knowledge of standard tools such as Word, Excel or PowerPoint.
- • Have an awareness of how reporting and data analysis output is used within your organisation.
- • No prior programming knowledge is required.

3.2   Technical Set-up

It is the responsibility of each participant to ensure that you have access to the correct software. For your upcoming training course, you will need access to Python and Jupyter Notebooks, and you will also need certain Python packages installed. Follow the instructions below to ensure your technical set-up is correct.

Python and Jupyter Notebooks:
For your upcoming training course, it is essential that you have access to Python and Jupyter Notebooks. There are detailed instructions in **Appendix 2** on how to successfully request the installation of Python.

You may need approval from your manager to install Python Mambaforge. Once installed, or if you already have Python installed on your machine, Jupyter Notebook will be found from the start menu.

3.3   Course Material

It is the responsibility of each participant to ensure that you have downloaded the course material before your course starts. The course material will include course notes, demo code, data and workshop. The course material for this course is available here

3.4 Pre-course Survey

To assist us in providing the best training experience for you and ensure that the course meets your needs and expectations, we ask that you complete our pre-course survey. The information you submit will be shared with your course facilitator and enable them to tailor their delivery, where possible, and ensure the best learning outcomes for each participant. The learning survey for your course is available at: **Pre-course Link Survey**

3.5 Course Cancellation

In the event you are unable to attend this course, please contact us as soon as possible at ecb-learners@krisolis.ie. This will allow us to re-allocate your place to another participant.

3.6 Learning Accessibility & Accommodations

Our goal is for all participants to be included, engaged and supported throughout the programme on a non-discriminatory basis. Please contact us about your accessibility accommodations in order to be able to complete this programme. Please know that disclosures are completely confidential.

3.7 Your Remote Set-up

In order to make the most of your online learning experiences here are some suggestions on how to set up your learning environment.
- A quiet, comfortable place to work. This includes a comfortable chair, plenty of light and privacy.
- A computer. It is obviously a requirement to have a computer to attend the course. If you're using a laptop, it is best to have it plugged into the mains - don't rely on your batteries.
- High-quality headset with microphone. This is often a neglected part of online classroom events, but it can make the difference between a successful and an unsuccessful session. If the quality of the sound is poor, it can be difficult to engage.
- A good Internet connection. As this course is delivered online a good internet connection is vital, if your connection is poor it may interfere with your learning experience.
- Two Screens. If it is possible, it is best that you have two screens, particularly for technical course. This will allow you to watch your facilitator on one screen and have your software open on the second.

4 COURSE DELIVERY – HOW WILL I LEARN?

This course takes place over two days and provides approximately 14 hours of live online instruction. Your training day runs from: 09:15hrs – 17:00hrs each day and will follow the timetable:
- **Session 1:** 9:15 – 10:45
- **Break:** 10:45 – 11:00
- **Session 2:** 11:00 – 12:30
- **Lunch:** 12:30 – 13:30
- **Session 3:** 13:30 – 14:30
- **Break:** 14:30 -14:45
- **Session 4**: 14:45 – 15:45
- **Break:** 15:45 -16:00
- **Session 5:** 16:00 – 17:00

4.1 Online Classroom detail

You will be using Webex for the delivery of this training programme. You will receive an email with the link and joining instructions for your training programme at least one week prior to starting the programme. If you have not received this information, please contact us at **ecb-learners@krisolis.ie.**

A guide to using Webex is available in **Appendix I**

4.2 Online Classroom Etiquette

As this is an online classroom below are some suggestions on online communications to help guide appropriate interaction and create a pleasant learning environment. The following is expected from all participants on the live sessions:
- **Be punctual**: If possible, log on 10-15 minutes before the scheduled start time to resolve any technical issues.
- **Reduce distractions:** Turn off your phones, disable all background programs and clear other distractions to enable you to concentrate fully on the training material.
- **Engage fully:** Participate, interact, and be prepared to be called on to speak at any time during a session. Keep your camera on during the session if your bandwidth will allow for it.
- **Questions are always welcome:** Use the room chat or raise hand option to ask constructive questions. Please don't hold back or wait until the end of a session to ask a question.
- **Let us know if you are leaving:** If you must leave your desk for any reason, please enter this information into the room chat to let your Programme Facilitator know.
- **Feedback is always welcome:** If you have any concerns throughout the session, contact your Programme Facilitator offline so that they can address your concerns and help you.
- **Respect fellow participants**: Please respect all contributions, experiences, and opinions from your fellow participants.

Equally, the following lists what you can expect from your Programme Facilitator:

- Your facilitator will **provide a friendly, interactive learning environment** that will support your learning and make this a positive learning experience.
- Your facilitator will **listen to your feedback and needs** and will adjust the programme, wherever possible, in order to meet those needs.
- Your facilitator will **respect your confidentiality** about anything which is discussed or takes place during the programme or is discussed offline.

APPENDIX 1: WEBEX GUIDE

Webex is the preferred video conferencing technology for the ECB. As such, you may already be familiar with it. If you are not, you can try out an online meeting through the test facility offered by web-ex here: https://www.webex.com/test-meeting.html

Below, you will find some guidelines below for the use of the web-ex solution during your course.

Receiving the Invitation

You will receive the link to your classroom via an email invitation or through an information email. If you open an invitation, you will see the following

You can click '*Join meeting*' or click on a link that you have received in a general information email, in order to be brought to the next step.

Joining

Once you have followed the link in the meeting invitation, you may be shown an introductory screen with some information about the meeting. This screen has another green 'join meeting' button, which you should click.
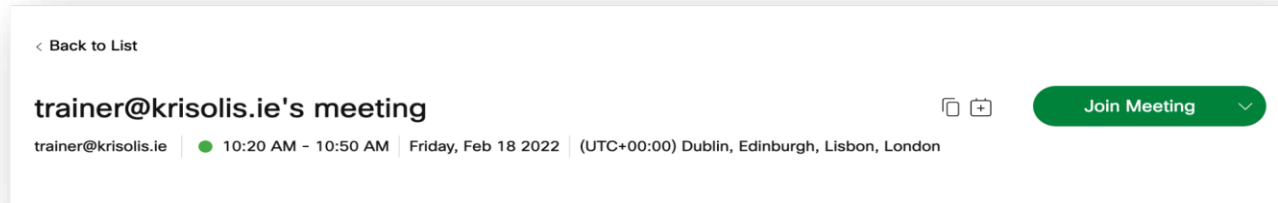
This will result in you being brought into a waiting room displaying the details of the host of the meeting at the top:
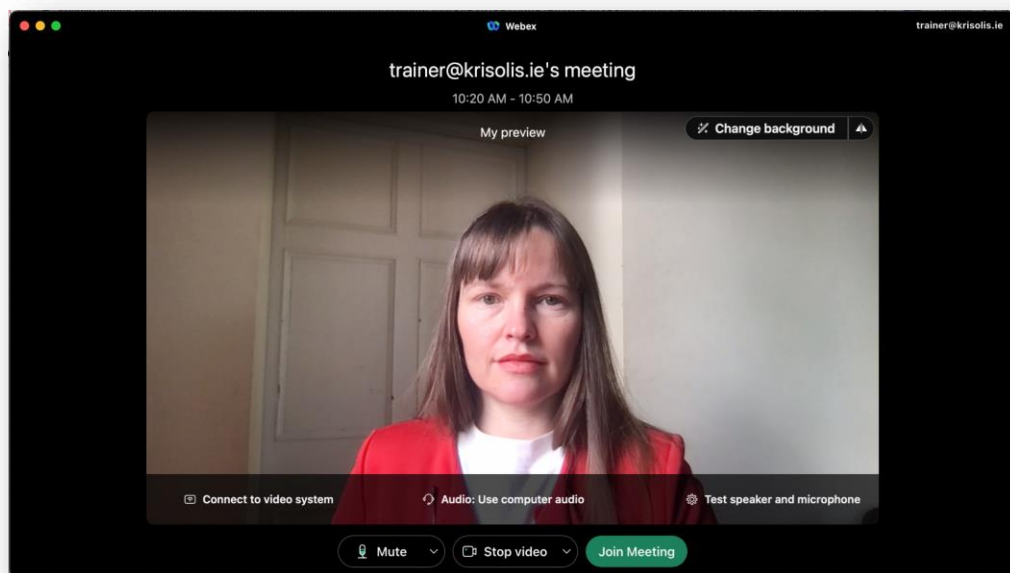
By selecting *'Join meeting'* once more from this screen, you will enter the classroom.

Controlling Your Sound and Camera

Mute

At the bottom of your screen you will see a 'mute' button. Selecting it will mean that others in the meeting cannot hear sound coming from your microphone, including your voice and any background noise. **Having**

your microphone muted, so that others cannot hear you, should be your default setting for when you are in the classroom.

Video

At the bottom of your screen you will see a 'stop video' button. Selecting it will mean that others in the meeting cannot see any picture coming from your camera, including you and your background. **Having your camera on**, so that others can see you, should be your default setting for when you are in the classroom.

Interacting

There are a number of features in webex that will allow you to use interact with the instructor and
Raise Your Hand

You may need to raise your hand in order to get the attention of your trainer during the course. To do so, simply click on the image of the hand on icon shown above. This will cause a hand image to appear on your own picture.


Provide Feedback

You may also be asked to provide feedback during the course. To do so, simply click on the image of the face on the icon shown above. It will cause a 'thumbs up' image to appear on your own picture.

Ask or Respond to a Question

You can use the chat function to ask and respond to questions during your course. To do so, click on the conversation bubble icon in the bottom right.
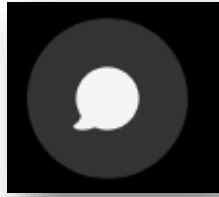
It will open the chat function, as follows:

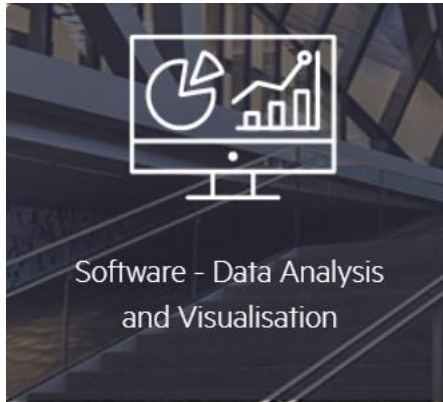**Join a Breakout Session**
Your trainer may start a breakout session where the group is separated into several smaller groups to facilitate workshops and discussions. Your trainer will assign you to your breakout room.

APPENDIX 2: HOW TO REQUEST PYTHON

1. Go to the ECB IT Service Portal

2. Click on **Software** – **Data Analysis and Visualization**

3. Scroll-down to the **Python Mambaforge** item and click on **Service Request**

4. Fill-in the required fields and proceed to Checkout and Submit

**Please Note:** You may need approval from your manager to install Python.

In case you already have Anaconda Python installed on your workstation, please be aware that the new Python Mambaforge package will NOT uninstall Anaconda Python and the two packages works together on the same workstation.

How to check that Python and Jupyter Notebook has been installed?

Once you have Python Mambaforge installed please check that the installation is correct by:

- From the windows start menu navigate to the Jupyter Notebook option, see below:
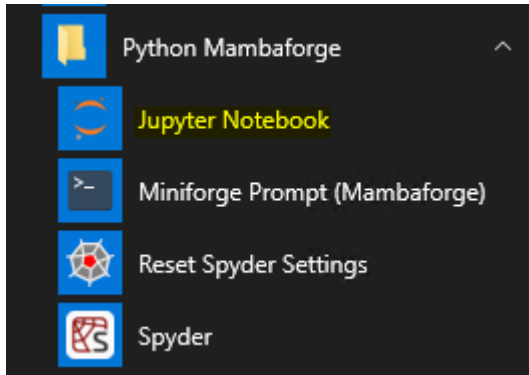
- Select Jupyter Notebook to launch the application, it will open the Jupyter Notebook hope page in a web browser, see below: