

Preparatory Content Learning Experience

Session Introduction:

The preparatory course has been designed to ensure that you are familiar with the concepts, tools and programming skills which will be used throughout the program. In the preparatory course, you will learn basic and intermediate Python for data analytics, querying in SQL and a few topics of mathematics which will be required in some modules of statistics and machine learning.

There are **five modules/topics in the preparatory course** as follows. It is strongly recommended that you go through all of them.

- Introduction to Python
- Python for Data Science
- Math for Data Analysis
- Data Visualisation in Python
- Introduction to SQL

These modules will be released one at a time, over the course of the next month, giving you ample time to understand and revise each of the topics. Any elements/components of these modules will not be counted towards your grades in the main program. However, at the beginning of the main program, you will be required to **submit a graded case-study** (Investment Case Study) which is based on the topics taught in the preparatory content.

Why these topics/languages?

- A good data science professional is expected to have expertise in SQL & at least one programming language (Python for this program). The preparatory course is aimed at building a strong foundation of these languages early on so that you can focus on the conceptual parts of statistics and machine learning during the main program.
- The curriculum of the main program is fairly advanced, and occasionally, an understanding of concepts in mathematics (specifically, linear algebra, matrices etc.) will be useful. Hence it is imperative that you have a good foundation of these topics.

How to consume the content?

- Attempt questions, practice assignments and coding exercises provided in each module, evaluate your own performance and identify areas for improvement
- Make sure to use the resources available online to improve on your weak areas. The additional reading material is provided in the modules.
- Use the discussion forum to ask questions and write answers to your batchmates' questions.
- Develop a good amount of expertise in Python and SQL programming early on. Do make sure that you spend substantial time practicing your coding skills
- Do ensure that you are devoting at least 8-10 hours on a weekly basis. Get yourself on a learning schedule so that continuous learning becomes part of your routine. We can not stress enough the importance of this.

Difference Between the Main program and the Prep Course:

The preparatory course gives you only a flavor of the learning experience of the main program. The main program's learning experience will be much more immersive and intensive where you will have access to:

1. **Industry assignments and case studies:** There will be multiple assignments and industry case studies which you will be solving as part of the main program and will receive feedback on.
2. **Real-world projects:** At the end of each course, you will be working on projects which will test your understanding of the subject and train you hands-on in various industry-relevant applications
3. **TA support on discussion forums:** Teaching Assistants will monitor the discussion forum and intervene when you have doubts.
4. **Student mentors:** A dedicated student mentor who will help you meet your learning goals, and overcome any non-academic challenges in the program.
5. **Industry lectures:** There will be multiple industry lectures (both live and recorded) where industry professionals will share their experience and cover relevant examples and topics.
6. **Faculty webinars:** IIITB faculty will be taking live lectures to cover conceptual topics and also address the most common doubts.
7. **An extensive network of peers:** In the main program, you will have an extensive network of peers from varied background. This will be an asset for life.

Doubt Resolution:

If you have doubts, please discuss amongst your peers through discussion forum and help each other out. In addition to that feel free to search online resources to get your doubts clarified. TA support is **not available** during the prep sessions. Once the main program starts, the discussion forum will be **monitored by TAs** and **faculty** to make sure that your queries are responded.

Note: We will be resetting the discussion forum points once the main program starts to make it fair to everyone.