Ascend Adamas Certificate Course in Python

- ☑ 6 Months Course
- ☑ 120 Hrs of Classes
- ☑ Live, Faculty-led, Online Teaching

Ascend®
LEARNING

ADAMAS UNIVERSITY KOLKATA
PURSUE EXCELLENCE

Python-Features and Advantages

- Easy to Code
- Easy to Read
- Free and Open-Source
- Robust Standard Library
- Interpreted
- Portable
- Object-Oriented and Procedure-Oriented
- Extensible
- Expressive
- Support for GUI
- Dynamically Typed
- High-level Language
- Simplify Complex Software Development
- Other Advanced Programming Features

"India is the world's largest IT Talent pool, with new technologies emerging everyday, it is imperative that the existing workforce is reskilled / upskilled. The Indian Youth that would be entering the workforce need to be trained in these future skills. We at Ascend Learning bring for our youth, high quality future - ready courses at affordable prices."

Mr. K. Sreenivasa Rao
Managing Director
Awe-Inspiring Products &Services Pvt. Ltd.

About us:

Ascend Learning is an education initiative of Awe-Inspiring Products and Services Pvt Ltd. Ascend Learning offers a bouquet of IT and non IT courses to its students who are looking for high quality education. Ascend Learning partnered with Adamas University and RICE Education to provide students with the best course content, job-oriented skills and by using unmatched teaching infrastructure.

What is Python?

Python is a high-level, versatile programming language known for its simplicity and readability. It is widely used in various fields such as web development, data science, artificial intelligence, scientific computing, software development and more. Overall, Python's versatility, simplicity, and large ecosystem make it a popular choice for a wide range of applications, from scripting and automation to complex software development and scientific research.

Benefits of learning Python

Learning Python offers numerous benefits across various domains. Some of the key advantages including ease of learning, versatility, wide range of libraries and frameworks, community support, portability and compatibility, rapid prototyping and development, support for object-oriented programming (OOP), career opportunities and high salary potential. Overall, learning Python equips individuals with valuable skills that are highly sought after in today's technology-driven world, making it a rewarding investment in terms of career prospects and personal development.

Roles available to a certified Python professional

Software Developer, Data Scientist, Machine Learning Engineer, Data Engineer, Web Developer, DevOps Engineer, Quality Assurance Engineer, Technical Trainer / Instructor, certified Python professionals often take up roles as technical trainers or instructors, teaching Python programming and related technologies to students, professionals, and corporate clients through workshops, courses, and training programs. Depending on self interests, skills, and specialization, Python professionals can explore a wide range of career opportunities across industries.

Companies Hiring Python Experts

" Google, Microsoft, TCS, Amazon, and so on. Young Startup companies to Well established large MNCs are all in need of talent trained in AI/ML. "

Additionally, consider obtaining certifications or participating in relevant open-source projects to enhance your qualifications and stand out to potential employers.

Who should take the course

The Python course is suitable for a wide range of individuals with different backgrounds and goals. Here are some examples of who can benefit from taking a Python course:

➡ **Beginners:**
Individuals who are new to programming and want to learn a versatile and easy-to-understand language can benefit from a Python course. Python's simple syntax and readability make it an ideal choice for beginners.

➡ **Students:**
Students studying computer science, engineering, Data science, or any other related field can take a Python course to enhance their programming skills. Python is often taught in educational institutions due to its relevance and popularity in the industry.

➡ **Professionals:**
Professionals from various backgrounds, including Software development, Data analysis, Web Development, Quality Assurance, Cybersecurity and more, can benefit from learning Python. It can help them advance their careers, stay updated with industry trends, and improve their job prospects.

➡ **Career Changers:**
Individuals looking to transition into a career in technology or those considering a career change can use Python as a stepping stone. Learning Python opens up opportunities in fields such as software development, data science, machine learning, and more. Ultimately, anyone with an interest in programming and a desire to learn can enroll in a Python course. Whether you're curious about coding, want to explore new technologies, or simply enjoy solving problems, Python offers a rewarding learning experience for enthusiasts of all backgrounds.

In summary, Python courses cater to a diverse audience, ranging from beginners to experienced professionals, across various industries and domains. Whether you're looking to start a career in tech, enhance your existing skills, or pursue personal interests, learning Python can be a valuable investment in your future.
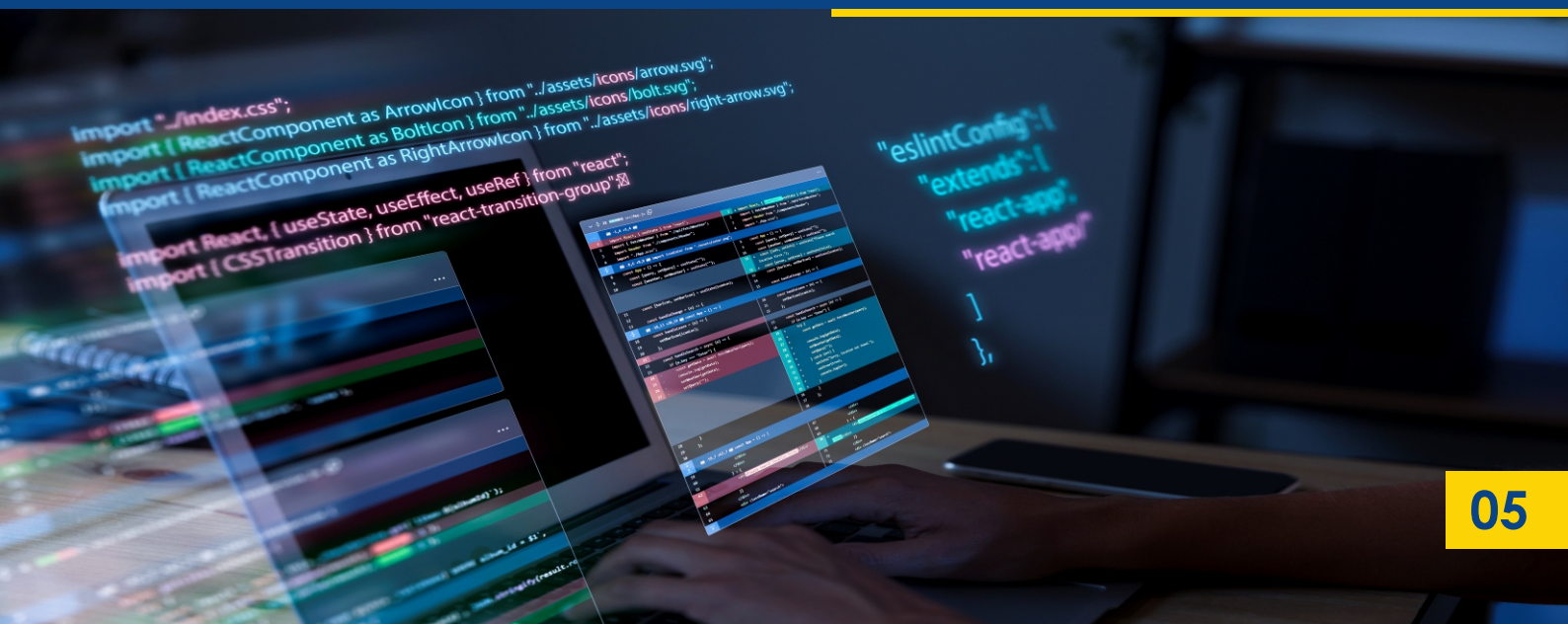
Course requirements

Learning Python typically doesn't require extensive prerequisites, but having a basic understanding of certain concepts can be helpful. Here are some recommended course requirements for learning Python: Basic Computer Skills, Understanding of Programming Concepts: While not mandatory, having a basic understanding of fundamental programming concepts such as variables, data types, operators, control structures (e.g., loops, conditionals), functions, and basic algorithms can make learning Python easier. Mathematics: Some areas of Python programming, such as data analysis, machine learning, and scientific computing, may require a basic understanding of mathematical concepts like arithmetic, algebra, and statistics. Motivation and Dedication: Learning Python, like any new skill, requires dedication and consistent effort. Setting clear goals, staying motivated, and practicing regularly are key to mastering Python programming. Overall, the course requirements for learning Python are minimal, and individuals from diverse backgrounds and skill levels can start learning Python with the right resources, dedication, and enthusiasm.

Why choose Ascend Learning for Python Course

Python study curriculum is created and taught by Adamas University Faculty who are experts in this field. Learning is through live sessions conducted by the faculty. The course has been designed to suit students coming from various backgrounds. Reading materials will be provided. Students missing a class can easily access the recordings of the missed sessions. Ascend Learning courses are job oriented, and provide students with professional skills and practical know-how for the chosen fields of work.

Course **Structure**

- ✈ **6 Months Course**
- ✈ **120 Hrs of Classes**
- ✈ **Live, Faculty-led, Online Teaching**
- ✈ **Classes by University Faculty**
- ✈ **Course Materials**
- ✈ **Project Work Included**

" Certificate issued by Adamas University on succesful completion of Online Test after finishing the course **"**

Skills you **learn**

Comprehensive coverage of Python syntax, data types, and control structures for beginners. In-depth exploration of advanced Python concepts such as object-oriented programming (OOP) and data manipulation. Practical training in web development using Flask framework, databases, and SQL integration. Introduction to GUI programming with Tkinter, data science concepts, and web scraping techniques. Hands-on projects and real-world applications to reinforce learning and skill development.

Course **Modules**

No of modules: 11

01 Introduction to Python ⏱10h
- Welcome to Python, setting up the environment
- Python syntax and data types (variables, numbers, strings)
- Working with data: lists, tuples, and dictionaries
- Control structures: if statements and loops (while and for)
- Functions and modular programming
- Input and output in Python
- Exception handling
- Working with files
- Basic debugging techniques
- Small coding exercises

02 Advanced Python Basics ⏱10h
- Advanced data types: sets and dictionaries
- List comprehensions
- Object-oriented programming (OOP) basics
- Classes and objects
- Inheritance and polymorphism
- Modules and packages
- Standard libraries and external modules
- Advanced debugging techniques
- Introduction to testing (unit tests)
- Hands-on projects using OOP concepts

03 Data Manipulation ⏱10h
- Introduction to NumPy (numerical Python
- NumPy arrays and basic operations
- Data analysis with Pandas (introduction)
- DataFrames and Series in Pandas
- Data cleaning and preprocessing
- Data visualization with Matplotlib
- Data visualization with Seaborn
- Introduction to data analysis with real datasets
- Hands-on data analysis projects
- Data manipulation case studies

04 Web Development with Python ⏱10h
- Introduction to web development and HTML/CSS
- Flask framework (web server) and project setup
- Routing and templates in Flask
- User input and forms
- Databases with SQLite and SQLAlchemy
- User authentication and sessions
- RESTful APIs with Flask.
- Deployment and hosting options
- Real-world web development projects
- Web development best practices

05 Databases and SQL ⏱10h
- Introduction to databases and SQL
- Creating and modifying databases and tables
- Retrieving data with SELECT statements
- Filtering data with WHERE and sorting with ORDER BY
- Joins, subqueries, and advanced SQL
- Modifying data with INSERT, UPDATE, and DELETE
- Introduction to NoSQL databases
- Connecting Python to databases
- Building database-driven applications
- Database and SQL projects

06 Introduction to GUI Programming ⏱10h
- Introduction to GUI programming with Tkinter
- Creating windows and widgets
- Layout management
- Event-driven programming
- User interfaces with Tkinter
- Advanced GUI features and styling
- File dialogs and handling user input
- GUI project building a simple application
- Debugging and testing GUI applications
- GUI design principles

07 Introduction to Data Science ⏱10h
- What is data science and its applications
- Introduction to Jupyter Notebook
- Data visualization with Seaborn and Matplotlib
- Data cleaning and preprocessing with Pandas
- Statistical analysis and hypothesis testing
- Machine learning concepts and scikit-learn
- Supervised learning: Regression and Classification
- Unsupervised learning Clustering
- Introduction to natural language processing (NLP)
- Data science projects and case studies

08 Web Scraping and Automation ⏱10h
- Introduction to web scraping
- HTML parsing with BeautifulSoup
- Scraping data from websites
- Web scraping ethics and legal considerations
- Introduction to automation with Python
- Automating repetitive tasks
- Web scraping and automation projects
- Selenium for browser automation
- Advanced automation techniques
- Building useful web scraping and automation tools

09 Introduction to Networking and APIs ⏱10h
- Introduction to networking and HTTP
- Making HTTP requests with Python
- Working with RESTful APIs
- Consuming data from popular APIs (e.g., Twitter, YouTube)
- Introduction to socket programming
- Building a simple networked application
- Networking and API projects
- Asynchronous programming and websockets
- Security and encryption in networking
- Networking best practices

10 Final Projects and Review ⏱10h
- Review of key concepts and skills
- Brainstorming and project ideation
- Project development (individual or group projects)
- Project presentations and peer feedback

11 Project Work Assignment ⏱20h
- Students will work on a significant Python project that demonstrates their skills and creativity. This project will serve as a culmination of their learning, allowing them to apply what they've learned throughout the course.
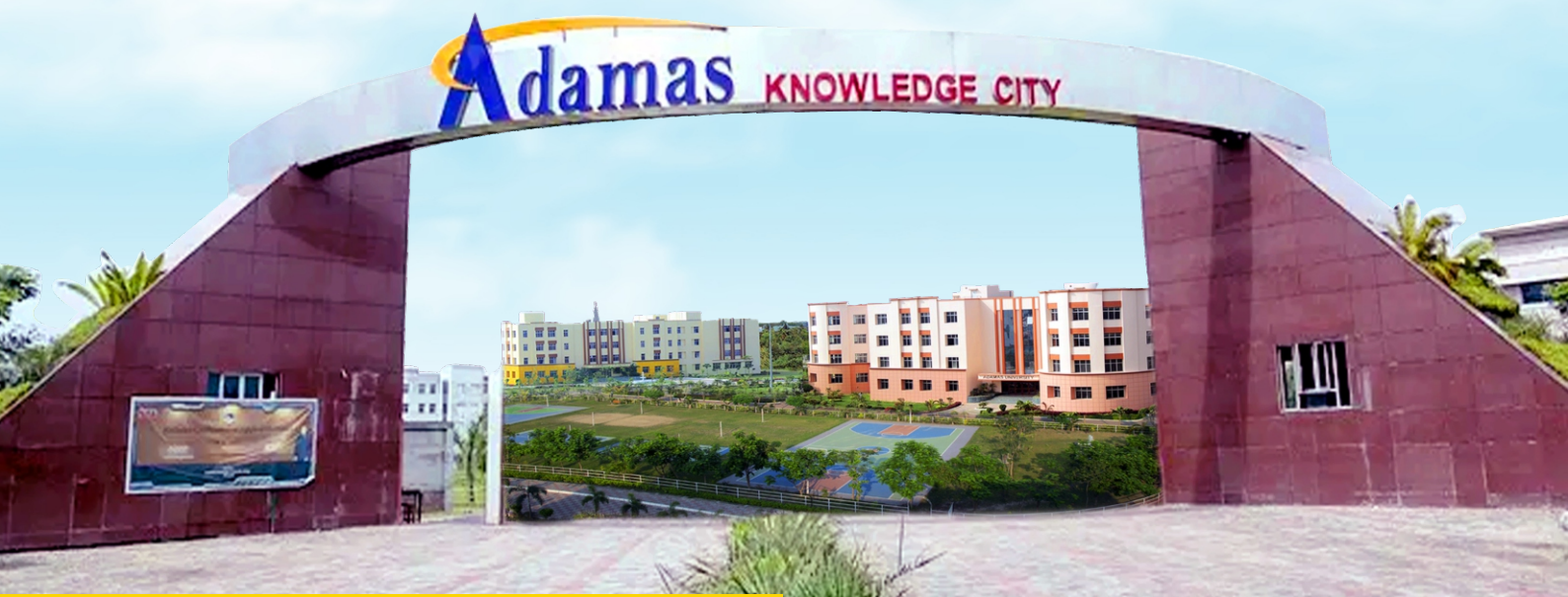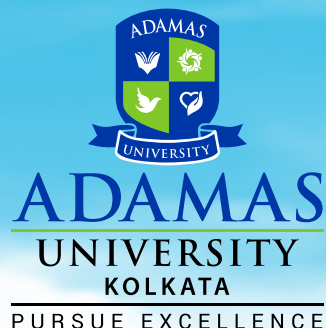
About Adamas Univ & CLL initiative

Adamas University, with a sprawling green campus extending over 120 acres, nestled in Barasat (13 kms away from the Subash Chandra Bose International Airport Kolkata), and in its 7th year of operation, aspires to impart finest quality education to the young minds of West Bengal, with an already established high quality research facility and a powerful team of teachers. The University has many international initiatives collaborating with the industries and educational institutes to facilitate projects, research and student exchange programs. Currently, in its 7th year, the campus has 5000+ current students and more than 2000 resident students & faculty members. The University has been established with the vision of providing quality education to students to help them become professionally competent as well as academically knowledgeable under the 10 Schools of Studies.Adamas University is established with the aim to provide a solution to all educational needs under one roof. It aims to create an environment for students that will not just arm them with the right kind of knowledge, but also develop them as well-rounded members of society. The university's Centre for Life Long Learning previously known as Centre for Professional Studies (CPS), Career Development Cell (CDC) and its schools have adopted number of capacity development and skill enhancement initiatives to prepare an industry-ready human resources. Ascend Learning partnered with Adamas University and their Center for Lifelong Learning and had developed and launched various short term courses that are affordable to students from Tier 2 aand Tier 3 towns.

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