

**Certification Course in Electronics and
Communication Engineering with
Specialization in
“Fundamentals of Python Programming”
Held On
August 2019 to October 2019**



**Department of Electronics and Communication
Engineering,
KG Reddy College of Engineering & Technology**
Chilkur(Village), Moinabad(Mandal), Hyderabad RR Dist-501504

S/c pusha
Coordinator


Principal
Principal
KG Reddy College of Engineering & Technology
Chilkur (V), Moinabad (M),
R.R.Dist., Telangana



SUMMARY REPORT ON FUNDAMENTALS OF PYTHON PROGRAMMING

About Course

The certification course on Fundamentals of Python Programming is concluded its work successfully by department of Electronics and Communication Engineering (ECE) in KG ready college of Engineering and technology (KGR CET), Hyderabad, Telangana. This course is a forum to bring together students to discuss innovative ideas and diverse topics of this course on next generation of information technologies. Department has taken a new step for students to improve the quality of study through this course and become most wide scale , extensive, spectacular event in computer science engineering. The six days course was held in two locations of the department (a) Department E-learning room for theory class and (b) Department laboratory for practical class.

Python, like many other programming languages, has different versions. And sometimes when we create software, the software needs to run on a specific version of the language because our software expects a certain behaviour that is present in older versions but changes in newer versions. Likewise, we may need to use specific versions of the libraries for similar reasons. But Python 2.7 and even a more modern Flask app that runs on version 0.12 and Python 3.4.

Exploring data sets and developing deep understanding about the data is one of the most important skills every data scientist should possess. People estimate that time spent on these activities can go as high as the project time in some cases. Python has been gaining a lot of ground as preferred tool for data scientists lately, and for the right reasons. Ease of learning, powerful libraries with integration of C/C++, production readiness and integration with web stack are some of the main reasons for this move lately.

In this course, it will use NumPy, Matplotlib, Seaborn and Pandas to perform data exploration. These are powerful libraries to perform data exploration in Python. The idea is to create a ready reference for some of the regular operations required frequently. It can iPython Notebook to perform data exploration, and would recommend the same for its natural fit for exploratory analysis.

This course is absolutely practical oriented course which is helped to student for making their carrier through python in industry. The students of 2nd year 2nd semester have been benefited in many ways from this course. More than 100 students have joined in this course as their own interest and completed this course. The trainer taught to students very nice with real time example and sharing his knowledge to develop technical skill in industry.

Scope of the Course

The role of Python environment is to be emphasized in computer science and engineering, to enhance and motivate the new technology for wide range of applications. Python can pretty much do the same tasks as R: data wrangling, engineering, feature selection web scrapping, app and so on. Python is a tool to deploy and implement machine learning at a large-scale. Python codes are easier to maintain and more robust than R. Years ago, Python didn't have many data analysis and machine learning libraries. Recently, Python is catching up and provides cutting-edge API for machine learning or Artificial Intelligence. Most of the data science job can be done with five Python libraries: Numpy, Pandas, Scipy, Scikit-learn



and Seaborn. Python, on the other hand, makes replicability and accessibility easier than R. In fact, if you need to use the results of your analysis in an application or website, Python is the best choice.

The bright future for Python learning students:

1. Python has been voted as most favorite programming language beating C, C++ and java programming. Python programming is open source programming language and used to develop almost every kind of application.
2. Python is being used worldwide as a wide range of application development and system development programming language. Big brands and search engine giants are using python programming to make their task easier. Google, Yahoo, Quora, Facebook are using python programming to solve their complex programming problems.
3. Python programming is versatile, robust and comprehensive. Python is high-level programming language and easy to learn as well as it reduces the coding effort compare to other programming languages.
4. Python programming is used to write test scripts and tests mobile devices performance. It is one of the most versatile languages these days. Python programmers are most demandable in the IT industry these days and get paid more compared to another language programmer.

Python, though a newer entrant in the fray, has gained importance than other programming languages and holds a lot of promise for developers. Apart from being an open source programming language, it is also one of the most versatile programming languages. Developers use it extensively for application development and system development programming. Also, reduced coding effort and better test performance ensure better programming. Hence, python developers are very much in demand.

An important feature of this course is very useful in service carrier. The selected topics of this course helped to make project work. This permits also a rapid and broad dissemination of project and research work.

Objectives of the course

The objective of the course is to bring together experts from academic institute and training institute for sharing of knowledge, expertise and experience in emerging trends related to the computer science and engineering topics.

- To understand why Python is a useful scripting language for developers.
- To learn how to design and program Python applications.
- To learn how to use lists, tuples, and dictionaries in Python programs.
- To learn how to identify Python object types.
- To learn how to use indexing and slicing to access data in Python programs.
- To define the structure and components of a Python program.
- To learn how to write loops and decision statements in Python.
- To learn how to write functions and pass arguments in Python.
- To learn how to build and package Python modules for reusability.
- To learn how to read and write files in Python.
- To learn how to design object-oriented programs with Python classes.
- To learn how to use class inheritance in Python for reusability.
- To learn how to use exception handling in Python applications for error handling.



- Learn one of the most popular tool for data analytics
- Learn Python Programming basics and essentials, along with machine learning for conducting data analytics in Python
- Hybrid Learning with Guided practice & Weekly Practice quiz questions on the app along with the classroom Sessions
- Hands-on application of the Tools
- App based learning. Connect with Faculty on the App apart from the regular classroom training.
- Data modelling using Machine learning Techniques.

OUTCOMES

This course was not only shared the knowledge among students but also tied up with expert for upcoming course. It can use different python environment to help on manage workloads for data science, scientific computing, analytics, and large-scale data processing. It can check out on data analysis and machine learning to learn more about various tools available to use and projects that it can do.

1. Describe the Numbers, Math functions, Strings, List, Tuples and Dictionaries in Python
2. Express different Decision Making statements and Functions
3. Interpret Object oriented programming in Python
4. Understand and summarize different File handling operations
5. Explain how to design GUI Applications in Python and evaluate different database operations
6. Design and develop Client Server network applications using Python

Summary of Participants

II Year

- (a) Number of students attended this course: 105
- (b) Number of students got certificate: 80

III Year

- (a) Number of students attended this course: 56
- (b) Number of students got certificate: 22



Month of August

Inauguration of Certification course

The first day of Certification course started with welcoming and opening ceremony at the KGR CET conference Hall. The following dignitaries were representatives of the Certification course who were addressed and pointed out the importance on course with short welcoming speeches.

Welcome addressed by Dr. Pravin Kshirsagar, HOD, ECE, KGR CET

About the Certification course by Principal Dr. R. S. Jahagirdar, KGR CET.

Importance of this course by expert trainer Arpit Yadav, KGR CET, Hyderabad

Interaction with 2nd year and 3rd Year 1st semester students

Python, like many other programming languages, has different versions. And sometimes when we create software, the software needs to run on a specific version of the language because our software expects a certain behaviour that is present in older versions but changes in newer versions. Likewise, we may need to use specific versions of the libraries for similar reasons. But we may have many projects on our computer, perhaps a Flask app that runs on version 0.11 (the first one you made!) and Python 2.7 and even a more modern Flask app that runs on version 0.12 and Python 3.4. If I try running both at once on Python 2 and Python 3, one of them may break because some of the code that runs on Python 2 doesn't run on Python 3 or vice versa. This is where virtual environments become useful.

✓ **Introduction**

- History
- Features
- Setting up path
- Working with Python
- Basic Syntax
- Variable and Data Types
- Operator

✓ **Conditional Statements**

- If
- If- else

- Nested if-else

✓ **Looping**

- For
- While
- Nested loops

✓ **Control Statements**

- Break
- Continue
- Pass

✓ **String Manipulation**

- Accessing Strings



- Basic Operations
- String slices
- Function and Methods

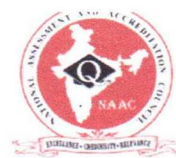
- Operations
- Working with lists
- Function and Methods

✓ **Lists**

- Introduction
- Accessing list



Training Phase



Month of September

If you didn't want to create the environment from the command line for those reasons or others, you could create a YAML (YAML Ain't Markup Language) file, which acts like a configuration file. Now that's great if you can easily create a YAML file and you know all of the packages you need. But what if you had an existing environment that you would like to duplicate? Perhaps you'd like to duplicate the application onto another server and want the exact same setup for consistency. If that's the case, then you can run the command below. As a note, for conda you need a YAML file; if you decide to use virtualenv, a txt file would also suffice for everything done here, but conda specifically needs a YAML file.

Anaconda Python Distribution: The Anaconda Python distribution is the easiest way to install Python and a collection of scientific packages and other tools (Sphinx, Jupyter Notebook, NumPy, matplotlib, to name a few) that we use in the Salish Sea MEOPAR project.

✓ Lists

- Introduction
- Accessing list
- Operations
- Working with lists
- Function and Methods

✓ Tuple

- Introduction
- Accessing tuples
- Operations
- Working
- Functions and Methods

✓ Dictionaries

- Introduction Accessing values in dictionaries
- Working with dictionaries
- Properties
- Functions

✓ Functions

- Defining a function
- Calling a function
- Types of functions
- Function Arguments
- Anonymous functions
- Global and local variables



Trainer clarifying Students doubts



Students are being shown Practical Examples

Month of October

In its default configuration, conda can install and manage the thousand packages at repo.continuum.io that are built, reviewed and maintained by Anaconda®. Conda can be combined with continuous integration systems such as Travis CI and AppVeyor to provide frequent, automated testing of your code.

The conda package and environment manager is included in all versions of Anaconda and Miniconda. Anaconda Repository. Conda is also included in Anaconda Enterprise, which provides on-site enterprise package and environment management for Python, R, Node.js,



Java and other application stacks. Conda is also available on PyPI, although that approach may not be as up to date.



Students Listening to the Final Conclusion

Covered Following topics

✓ **Functions**

- Defining a function
- Calling a function
- Types of functions
- Function Arguments
- Anonymous functions
- Global and local variables

✓ **Modules**

- Importing module
- Math module
- Random module
- Packages
- Composition

✓ **Input-Output**

- Printing on screen
- Reading data from keyboard
- Opening and closing file
- Reading and writing files
- Functions

Course Coordinator



KG REDDY

College of Engineering
& Technology

Ref No: KGR CET/CSE/2019-20/

Date: 25/07/2019

CIRCULAR

All the students of II and III Year I-semester B.Tech ECE are here by informed to enroll for the certification course on “**Fundamentals of Python Programming**”, which is offered by KG Reddy college of Engineering and Technology in this semester. The students are instructed to contact Dr. Hemanta Kumar Bhuyan for completing their registration before 31/07/2019.

I/cpaha

HOD

HEAD
DEPT. OF ELECTRONICS & COMMUNICATIONS ENGINEERING
K.G. REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
CHILKUR (V), MOINABAD, R.R. DIST. 501 504

Principal

Principal
KG Reddy College of Engineering & Technology,
Chilkur (V), Moinabad (M).
R.R. Dist., Telangana.

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KG Reddy College of Engineering & Technology
Chilkur, Moinabad, RR District

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Value Added course, Syllabus

KGR CET, Hyderabad

KGRVAC0507: Fundamentals of Python Programming

B.Tech., ECE, II & III Year-I Sem

L-30

Course Objectives

- (a) Understand Python is a useful scripting language for developers.
- (b) Use lists, tuples, and dictionaries in Python programs.
- (c) Use indexing and slicing to access data in Python programs.
- (d) Define the structure and components of a Python program.
- (e) Design loops and decision statements in Python.
- (f) Define functions and pass arguments in Python.
- (g) Build package Python modules for reusability.
- (h) Design object-oriented programs with Python classes.
- (i) Use class inheritance in Python for reusability.
- (j) Use exception handling in Python applications for error handling.

Course Outcomes

At the end of the course, the student will be able to:

- (a) Use if-else statements and switch-case statements to write programs in Python to tackle any decision-making scenario
- (b) Create an entire Python project using objects and classes
- (c) Store and retrieve information using variables
- (d) Develop cost-effective robust applications using the latest Python trends and technologies
- (e) Proficient in Debugging and Version Control
- (f) Build systems entire web development process using various tools
- (g) Create and use APIs to write back-end code



MODULE-I : PYTHON SYLLABUS

✓ Introduction

- History
- Features
- Setting up path
- Working with Python
- Basic Syntax
- Variable and Data Types
- Operator

✓ Conditional Statements

- If
- If- else
- Nested if-else

✓ Looping

- For
- While
- Nested loops

✓ Control Statements

- Break
- Continue
- Pass

✓ String Manipulation

- Accessing Strings
- Basic Operations
- String slices
- Function and Methods

✓ Lists

- Introduction
- Accessing list
- Operations

- Working with lists
- Function and Methods

✓ Tuple

- Introduction
- Accessing tuples
- Operations
- Working
- Functions and Methods

✓ Dictionaries

- Introduction Accessing values in dictionaries
- Working with dictionaries
- Properties
- Functions

✓ Functions

- Defining a function
- Calling a function
- Types of functions
- Function Arguments
- Anonymous functions
- Global and local variables

✓ Modules

- Importing module
- Math module
- Random module
- Packages
- Composition

✓ Input-Output

- Printing on screen



- Reading data from keyboard
- Opening and closing file
- Reading and writing files
- Functions

CAPSTONE PROJECT

Outcome of Module

Students will able to:

- Basics of Python
- Identify/characterize/define a problem
- Design a program to solve the problem
- Create executable code
- Read most Python code
- Write basic unit tests

KG REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
Chilkur (Vill) Moinabad (Mdl) R R Dist

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

CERTIFICATION COURSES ON FUNDAMENTALS OF PYTHON PROGRAMMING

SCHEDULE

From August 2019 to October 2019

II A- Wednesday (2.30 pm to 4.30 pm)

II B- Thursday (10 am to 12 pm)

ECE III – Saturday (2.30 pm to 4.30 pm)

Syllabus Coverage with dates: ECE II A

Week 1	Introduction to Python	08/08/2019
Week 2	Data Types	22/08/2019
Week 3	List, Dictionary, Tuples,sets	29/08/2019
Week 4	Data Operator	05/09/2019
Week 5	Conditional Statements- If Else	19/09/2019
Week 6	Control Statements- For Loop and While Loop	03/10/2019
Week 7	Functions	24/10/2019
Week 8	Objects Oriented Class	31/10/2019

Syllabus Coverage with dates: ECE II Year B

Week 1	Introduction to Python	07/08/2019
Week 2	Data Types	14/08/2019
Week 3	List, Dictionary, Tuples,sets	21/08/2019
Week 4	Data Operator	28/08/2019
Week 5	Conditional Statements- If Else	04/09/2019
Week 6	Control Statements- For Loop and While Loop	18/09/2019
Week 7	Functions	25/09/2019
Week 8	Objects Oriented Class	24/10/2019
Week 9	Exceptions	31/10/2019



Syllabus Coverage with dates:ECE III Year

Week 1	Introduction and differences	17/18/2019
Week 2	Operators, classes and objects of java.	31/08/2019
Week 3	Input output methods of java and programs, hands on in lab	07/09/2019
Week 4	Access specifiers and their use in java, examples programs	21/09/2019
Week 5	Inheritance ,types, reusability examples program, polymorphism example	26/10/2019
Week 6	Exception handling in java, different key words of java their functioning examples	31/10/2019/
Week 6	Exception handling examples explanation	31/10/2019
Week 6	Multithreading in java thread class extension.	31/10/2019
Week 6	Different random examples	31/10/2019
Week 6	Java applet life cycle applet examples	31/10/2019

Resource Person Profile

Arpit Yadav

Mr Arpit Deepak Yadav has done B.E (Electronics & Telecommunication) and M.Tech (VLSI), he is having 8 Years of Experience in VLSI Research. He worked in IT industry but due to interest in Research Field he is currently working as Assistant Professor and mentoring many technocrats. He is Associated with PM Yuva Yojana

Core Skills:

Tools: Python, VHDL, VLSI Design, Keras, TensorFlow, OpenCV, NLTK.

Skills: Data Science Using Python, Machine Learning Using Python, Data Analysis, Data Visualization, Deep Learning, Neural Network, Natural Language Processing (NLP).

He has done certifications in the domain of python, Data Science, Machine Learning, Deep Learning and Artificial Intelligence.

- APTITUDE DEVELOPMENT
- GROUP DISCUSSION
- PERSONAL INTERVIEW / TECHNICAL INTERVIEW
- EXTEMPORE / ELOCUTION / DEBATES
- COUNSELING
- FREQUENT MOTIVATIONAL TALK
- SITUATIONAL CONVERSATION
- RESUME WRITING
- VIDEO RESUME
- COVER LETTER
- ESSAY WRITING
- EMAIL WRITING
- GROOMING
- ACTIVITIES FOR TEAM BUILDING,
- LEADERSHIP QUALITY.
- CHALLENGING / LOGICAL ACTIVITIES ON
- FIELD
- EXPERT TALKS
- ENTREPRENEUR DEVELOPMENT

He is Giving Training to Competitive Examination/ CRT (Campus Recruitment Training). He is given training from last 6 Years. He is Lifetime member of IETE (Institution of Electronics and Telecommunication Engineers, New Delhi). He is CO-OPT Member of IETE, Nagpur Body. He won many Prizes in Group Discussion/Debate Competition during his academic.

He has conducted Many CRT (Campus Recruitment Training) Programmes, Motivational Workshop, and Research Workshop for the development of Students. Out of passion he is having key interest in smart Career Counseling for under graduates for Skilled Development. He is involved in Skills development of students by Smart Career Counseling which will help candidates for overall personality Development.