Bundled Courses:

1. Data Analysis with Python & Pandas:
2. Big Data With Hadoop
3. Python game development - Create a flappy bird clone
4. Affinity Designer for Beginners
5. Android Application Development and Testing
6. Coding Standards for Quality Software
7. Application Development using Java EE
8. Network Administration
9. PHP and MySQL
10. Fundamentals of Program Development
11. Data Visualization with Python and Matplotlib

Standalone Courses:

SL NO	COURSE NAME	DURATION	FEES	PUBLISHER NAME	
1	Complete Java	24 Weeks	25,000	TCS iON	
2	Fundamentals of HTML	5 Weeks	4000	Stone River eLearning	
3	Fundamentals of Java Programming	5 Weeks	7000	Stone River eLearning	
4	Fundamentals of MySQL	6 weeks	7000	Stone River eLearning	
5	Fundamentals of PHP	7 weeks	7500	Stone River eLearning	
6	Excel 2013 (Advanced Excel)	3 weeks	3000	TutorPro	
7	C++ Programming Fundamentals	3 Weeks	3100	Stone River eLearning	

Curriculum for Bundled Courses:

1. **Data Analysis with Python & Pandas:**

About The Course: Pandas is A free, open source library that provides high-performance, easy to use data structures and data analysis tools for Python; specifically, numerical tables and time series. If your project involves lots of numerical data, Pandas is just right for you.

Once you have Python installed and are familiar with the language, you'll be all set to go. The course begins with covering the fundamentals of Pandas (the library of data structures you'll be using) before delving into the most important functions you'll need for data analysis; creating and navigating data frames, indexing, visualizing, and so on. Next, you'll get into the more intricate operations run in conjunction with Pandas including data manipulation, logical categorizing, statistical functions and applications, and more. Missing data, combining data, working with databases, and advanced operations like resampling, correlation, mapping and buffering will also be covered.

By the end of this course, you'll not only have grasped the fundamental concepts of data analysis, but through using Python to analyze and manipulate your data, you'll have gained a highly specific and much in demand skill-set that you can put to a variety of practical uses for just about any business in the world.

Curriculum:

- Course Introduction
- Introduction to Pandas
- IO Tools
- Pandas Operations
- Handling for Missing Data / Outliers
- Combining Dataframes
- Advanced Operations
- Working with Databases
- Assessment

2. **Python Game Development - Create a flappy bird clone:**

Python game programming is a set of Python modules designed specifically for writing games. It allows you to create fully featured games and multimedia programs using the Python programming language. Python is highly popular and versatile, running on almost every platform and operating system out there; so mastering it is of enormous benefit whether you want to create Python games or pretty much anything else. By completing this course, you can create open source, free, freeware, shareware and commercial games using Python game programming.

This course contains 21 lectures and over 30 hours of content. It is intended for those who already have a working knowledge of Python programming or general programming, and who want to apply their skills to games development. However, beginners too, may still be able to follow the course. The focus of this course is to create a clone of the smash hit (and extremely simple) game Flappy Bird using Python game programming. You will first be introduced to Python programming concepts and initial coding, and then delve straight into making your game from scratch. The first two elements of the game that you will learn are the time clock and game over. From there, you'll progress to initial graphics setup, including the background and adding graphics to the screen. Following that, you'll move on to working with coordinates. The next few sections of the course focus in detail on creating input controls, boundaries, crash events and menu creation, as well as creating obstacles using polygons. Finally, you'll add the finishing elements to your game like game logic, score display, colors, and most importantly, difficulty levels.
In classroom sessions:

- simple topics will be recapped for important points and concepts
- moderately difficult topics will be explained in brief with example(s) and demonstration(s)
- difficult topics will be explained in depth with example(s) and demonstration(s) for each concept

By the end of this course you will have created your own Flappy Bird game from scratch using Python game programming and Python game development techniques. The skills you picked up along the way will give you a solid groundwork for creating bigger, more complex, and more versatile games that can be run on any platform or any operating system.

Curriculum:

- Introduction to the Course and the Game
- Graphics Setup
- Creating Input Controls
- Boundaries, Crash Events and Menu Creation
- Creating Obstacles Using Polygons
- Game Logic: Using Block Logic
- Game Logic: Success or Failure
- Creating the Score Display
- Adding Colors and Difficulty Levels
- Assessment

3. Affinity Designer for Beginners:

Affinity Designer is the fastest, most efficient and arguably the best vector graphic design software to come along in recent years. It is more affordable and more specialised than Adobe Creative Suite; it is ideal for working on websites, UI design, concept art, illustrations and icons, and all kinds of graphics. Made by designers for designers, it is packed with all the intuitive features and was even bestowed with the honour of an Apple Design Award in 2015. This course is ideal for graphic designers, web designers and artists. It includes 17 lectures and over 3 hours of content. This course is suited for both complete beginners and those who already have experience with similar software such as Adobe. The course will show you how the Affinity Designer user interface works by creating real world projects. You will learn how to use the various tools of Affinity Designer in a hands-on environment. Apart from vector graphics you will also learn how to manipulate images, design logos and icons, create graphic illustrations, combine images, render images for all media types and finally, learn to export your work for the web, print and app development. In classroom sessions:

- Simple topics will be recapped for important points and concepts.
- Moderately difficult topics will be explained in brief with example(s) and demonstration(s).
- Difficult topics will be explained in depth with example(s) and demonstration(s) for each concept.

By learning, Affinity Designer in a hands-on environment, you'll gain an in-depth understanding of not only the tools used within the program, but also the design principles and practices as a whole, which you can then apply to design projects on almost any other platform.

Curriculum:

- Introduction to the Course
- Introduction to Affinity Designer
- Creating a Graphic Illustration
- User Interface Design
- Design a Logo
- Image Editing

4. **Android Application Development and Testing:**

The learning artefacts are in the form of ebooks, slides with audio, exercises in between and at the end of modules and Assessments at the end of each module to support online learning. Difficulties faced by participants with regards to the subject matter will be resolved through collaboration with peers and an expert who will mentor the online learning.

For classroom sessions:

- Simple topics will start with recap of important points and discussion of concepts, followed by solving of exercises in the lab.
- Moderately difficult topics will be explained in brief with example(s) and demonstration(s). Questions will be asked and discussed and if required, demonstration with more examples will be carried out, followed by solving of exercises in the lab.
- Difficult topics will be explained in depth with example(s) and demonstration(s) for each concept. Learners will be asked to answer a set of questions and the responses will be taken up as group discussions in the class.

Curriculum:

- Introduction to Android
- Developing an Android Application
- Application Development Cycle
- Android Activities and UI Design
- Advanced UI Programming
- Menus, Dialog Boxes, List and Adapters
- Data Storage, Retrieval and Sharing
- Maps, Geocoding, and Location-Based Services
- Working in the Background
- Peer-to-peer Communication
- Accessing Android Hardware
- Testing and Debugging Android Application.
- Monetizing, Promoting and Distributing Applications

5. Coding Standards for Quality Software:

Writing code in an arbitrary manner is not good practice. Code must be readable, names must be meaningful and logic should be well documented. Coding standards have evolved to provide guidelines to make the entire code meaningful and understandable to other programmers. This course would provide different aspects of widely used coding standards and quality for different programming languages.

The learning artifacts are in the form of eBooks, Slides with Audio, Exercises in between and at the end of modules and Assessments at the end of each module to support online learning. Difficulties faced by participants with regards to the subject matter will be resolved through collaboration with peers and an expert who will mentor the online learning.

For classroom sessions:

1. Simple topics will start with recap of important points and discussion of concepts, followed by solving of exercises in the lab.
2. Moderately difficult topics will be explained in brief with example(s) and demonstration(s). Questions will be asked and discussed and if required, demonstration with more examples will be carried out, followed by solving of exercises in the lab.
3. Difficult topics will be explained in depth with example(s) and demonstration(s) for each concept. Learners will be asked to answer a set of questions and the responses will be taken up as group discussions in the class.

Curriculum:

- Introduction
- Coding Standard For C
- Coding Standard for C++
- Coding Standard for Java
- Coding Standard for VB.NET
- Coding Standard for C SHARP
- Coding Standard for ASP.NET

6. <u>**Application Development using Java EE:**</u>

This course is designed to provide a hands-on approach to learn Java Enterprise Edition (JEE) and to help learners become professional Web Developers.

The learning artifacts are in the form of eBooks, Slides with Audio, Exercises in between and at the end of modules and Assessments at the end of each module to support online learning. Difficulties faced by the participants with regards to the subject matter will be resolved through collaboration with peers and an expert who will mentor the online learning.
For classroom sessions:

- Simple topics will start with recap of important points and discussion of concepts, followed by solving of exercises in the lab.
- Moderately difficult topics will be explained in brief with example(s) and demonstration(s). Questions will be asked and discussed and if required, demonstration with more examples will be carried out, followed by solving of exercises in the lab.
- Difficult topics will be explained in depth with example(s) and demonstration(s) for each concept. Learners will be asked to answer a set of questions and the responses will be taken up as group discussions in the class.
- Assignments will be based on more than one concept.

Curriculum:

- Overview of JDBC
- Introduction to Web Application Technologies
- Introduction to Servlet and Servlet Architecture
- Web Server Architecture, Servlet Life Cycle and Netbeans
- Introduction to Servlet API
- Web Deployment Descriptor, Servlet Configuration & Mapping
- Servlet Configuration using Annotation @WebServlet
- Request & Response Processing
- HTTP & Session Management
- Scopes in Web Application
- Filter and Filter API, Development of Filter Class
- Core Syntax and Semantics
- Syntactic Elements of a JSP Page
- Directives
- Objects of JSP
- Standard Action
- XML and JSP
- JSP Expression Language (EL)
- JSTL (Core Library)

7. Network Administration:

This course is designed to provide sound grounding on CISCO administration and enable the learner to understand the process of administrating CISCO routers.

The learning artifacts are in the form of eBooks, Slides with Audio, Exercises in between and at the end of modules and Assessments at the end of each module to support online learning. Difficulties faced by participants with regards to the subject matter will be resolved through collaboration with peers and an expert who will mentor the online learning.

For classroom sessions,

1. Simple topics will start with recap of important points and discussion of concepts, followed by solving of exercises in the lab.
2. Moderately difficult topics will be explained in brief with example(s) and demonstration(s). Questions will be asked and discussed and if required, demonstration with more examples will be carried out, followed by solving of exercises in the lab.
3. Difficult topics will be explained in depth with example(s) and demonstration(s) for each concept. Learners will be asked to answer a set of questions and the responses will be taken up as group discussions in the class.

Assignments will be based on more than one concept. After completing this course the learner will be able to start developing desktop applications as per the development requirements.

Curriculum:

- High Availability
- Switching Fundamentals
- Virtual Local Area Network
- Spanning Tree Protocol
- Network Address Translation
- Access Control Lists
- IPv6 Basics and Configuration
- WAN Fundamentals and Protocols
- Virtual Private Network
- Network Management

8. **PHP and MySQL**

This course is designed to provide sound grounding on PHP and emphasize its importance in web application development and enable the learner to understand the process for the development of any web application.

The learning artifacts are in the form of eBooks, Slides with Audio, Exercises in between and at the end of modules and Assessments at the end of each module to support online learning. Difficulties faced by participants with regards to the subject matter will be resolved through collaboration with peers and an expert who will mentor the online learning.

For classroom sessions,

- Simple topics will start with recap of important points and discussion of concepts, followed by solving of exercises in the lab.
- Moderately difficult topics will be explained in brief with example(s) and demonstration(s). Questions will be asked and discussed and if required, demonstration with more examples will be carried out, followed by solving of exercises in the lab.
- Difficult topics will be explained in depth with example(s) and demonstration(s) for each concept. Learners will be asked to answer a set of questions and the responses will be taken up as group discussions in the class.

Curriculum:

- Introduction to PHP
- Basics of PHP
- Arrays, Control Structures and File Inclusions
- Functions, Function Scope and Variable Scope
- Basic Object-Oriented Programming Concepts in PHP
- Advanced Object-Oriented Programming Concepts in PHP
- Developing Web Applications with PHP
- Basic Concepts of MySQL
- Integrating PHP with MySQL Database
- Advanced CRUD Operations with PHP and MySQL

9. **Fundamentals of Program Development:**

This course is designed to provide sound grounding on Algorithms and emphasize their importance in programming and enable the learner in following the scientific processes required for the development of any software program. The course lays the foundations of programing logic and is a must for anyone aspiring to develop software applications.

The learning artefacts are in the form of eBooks, Slides with Audio, Exercises in between and at the end of modules and Assessments at the end of each module to support online learning. Difficulties faced by participants with regards to the subject matter will be resolved through collaboration with peers and an expert who will mentor the online learning.

For classroom sessions,

- Simple topics will start with recap of important points and discussion of concepts, followed by solving of exercises in the lab.
- Moderately difficult topics will be explained in brief with example(s) and demonstration(s). Questions will be asked and discussed and if required, demonstration with more examples will be carried out, followed by solving of exercises in the lab.
- Difficult topics will be explained in depth with example(s) and demonstration(s) for each concept. Learners will be asked to answer a set of questions and the responses will be taken up as group discussions in the class.

Assignments will be based on more than one concept. After completing this course, the learner will be able to start learning how to program in any of the programming languages that are being used in the academic and commercial worlds.

Explanation of difficult concepts by expert using examples and demonstrations, followed by guided hands-on and completion of assignment by participant.

Curriculum:

- Introduction to Designing Algorithms
- Developing Flowcharts using Raptor Tool
- Developing Algorithm and Converting to Flowchart - Working with Control Flow Statements
- Complex Problem Statement - Working with Subscripted Variables
- Modularizing Existing problem statements into Procedures
- Working with Files
- Developing Object Oriented Concepts-Additional Problems mapping to Real Life Scenario

10. Data Visualization with Python and Matplotlib:

This course covers almost every major chart that Matplotlib is capable of providing and is intended for learners who already have a basic understanding of Python. You will learn the step-by-step approach to create line graphs, scatter plots, stack plots, pie charts, bar charts, 3D lines, 3D wire frames, 3D bar charts, 3D scatter plots, geographic maps, live updating graphs, and virtually anything else you can think of.

The course will start with basic functions like labels, titles, window buttons and legends, and then move onto each of the most popular types of graphs, also covering the method to import data from both - CSV and NumPy. You will also learn advanced features like customised spines, styles, annotations, averages and indicators, geographical plotting with Basemap and advanced wireframes.

This course has been specially designed for students who want to learn a variety of ways to visually display Python Data. Tools that will be used for this course are:

Python 3: A general purpose programming language which focusses on readability and concise code, making it a great language to learn for new coders. Learning Python gives a solid foundation for learning more advanced coding languages, and allows developing of a wide variety of applications.

Matplotlib: Matplotlib is a plotting library that works with the Python programming language and its numerical mathematics extension 'NumPy'. It allows the user to embed plots into applications using various general purpose toolkits (essentially, it is what turns the data into graph).

IDLE: IDLE is an Integrated Development Environment (IDE) for Python, where you turn the data into a graph. Although you can use any other IDE to do so, we recommend the use of IDLE for this particular course.

In classroom sessions,

- Simple topics will be recapped for important points and concepts.
- Moderately difficult topics will be explained in brief with example(s) and demonstration(s).
- Difficult topics will be explained in depth with example(s) and demonstration(s) for each concept.

On completion of this course, you will gain a deep understanding of the options available for visualising data, and also have the know-how to create well presented, visually appealing graphs.

Curriculum:

- Introduction
- Different Types of Basic Matplotlib Charts
- Basic Customisation Options
- Advanced Customisation Options
- Geographical Plotting with Basemap
- 3D Graphing