

COURSE PROSPECTUS

**Name of the Group:** IT Group

**Name of the Course:** Advanced Diploma in BigData Analytics

**Course Code:** SW200

**Starting Date:** 16-09-2019

**Duration:** 16 weeks

**Course Coordinator:** PrasonKumar KG , Ph:04952287266 -ext.239

**Preamble:** In today's world there is data available in abundance from variety of sources like web server logs, social media, and large databases and from diverse domains like Ecommerce, Medical, Scientific etc. Big data analytics is the process of examining these data to uncover hidden patterns, unknown correlations and other useful information that can be used to make better decisions. Business people, Doctors, Scientists etc. can use this to improve their services.

The main challenge to the analysis of big data comes because of the 4 V's—volume, velocity, variety and veracity. For effective analytics, we need to deal with high volume of data of different variety which is being generated in high velocity. The data what is available from such sources is highly unstructured which calls for analytics on the same.

**Objective of the Course:** The objective is to make the participants capable of identifying and applying appropriate techniques and tools to solve problems in managing huge quantity of data.

**Outcome of the Course:** After undergoing this course the participants will become data engineers who can perform analytics operations on data using various tools. They can develop, maintain and evaluate Big Data and machine learning solutions for organizations.

**Course Structure:** Linux concepts, Java programming: 2 weeks

R Programming: 3 weeks

Python Programming: 3 Weeks

BigData concepts, Hadoop and MapReduce: 3Weeks

Machine Learning(using R, Python, Spark) : 1 Week

Hive, Pig, Sqoop, Flume, Hbase,Spark: 1Week

Project: 3 Weeks

*Other Contents*

a. **Course Fees:**

**General Candidates:** Course fee is Rs.40,000 + GST at actuals

**SC/ST Candidates :** Tuition Fees are waived for SC/ST students admitted under SCSP/TSP. However they are required to remit an amount of **Rs. 4000/- as Advance caution/security deposit.** This amount will be considered as caution/security deposit and will be refunded after successful completion of the course. If the student fails to complete the course

successfully this amount alongwith any other caution/security deposits by the student will be forfeited.

**Modular wise Course Fee:** Not Applicable for this course

- b. **Registration Fee:** An amount of Rs.1000/- (including GST)(nonrefundable) should be paid at the time of registering for the course.

This fee shall be considered as part of course fee, if the student joins the course. If a student register and pay for more than one course and join for any one course, all such amount will be adjusted against the course fee payable.

If the student does not join for the registered course / any of the registered courses, fee paid shall be forfeited.

**For SC/ST candidates, the registration fee is Rs.500/-** and will be considered as part of caution/security deposit and will be refunded after successful completion of the course. If the candidate does not join or fails to complete the course the amount will be forfeited

However above the registration fee shall be refunded on few special cases as given below

- Course postponed and new date is not convenient for the student
- Course cancelled in advance, well before the admission date

- c. **Course Fee Installment Structure:**

Students can pay the full fees of Rs.47200/- (Rs.40000/-+ GST) in advance or as installments as given below

Fees	*Amount for General Candidates	Amount for SC/ST Candidates. (considered as caution/security deposit)	#Due Date (on or before)
Registration Fee	Rs.1000/-	Rs.500/-	During Registration
**Advance Fee	Rs.10000/-	Rs.4000/-	11-Sep-2019
1 <sup>st</sup> Installment	Rs.36200/-	Nil	16-Sep-2019
2 <sup>nd</sup> Installment	Not Applicable	-	-
Total Fee	Rs.47200/-	Rs.4500/ (refundable after successful completion of course)	-

\*Above fees is inclusive GST@actuals(18%) and revision if any will be applicable at the time of payment.

# Fine will be applicable to late fee payment.

\*\* Advance fee - After publication of first selection list, the students in the first selection list have to pay the Advance Deposit within the due date

to take the provisional admission. Students in the additional selection list should pay both Advance and First installment fee together on or before counseling day

- d. Eligibility: ME/MTech/BE/BTech/MSc/BSc / 3 year Diploma in (IT/Computer Science/Electronics), MCA/BCA /Degree holders with PGDCA or DOEACC A or B level or equivalent to any of these with good programming knowledge.
- e. Number of Seats : 40
- f. Selection of candidates : Selection of candidates will be based on the marks obtained in their qualifying examination.
- g. Test/Interview : Not Applicable
- h. Counseling/Admission : 16-Sep-2019
- i. Important Dates:
  - Last date for submitting application : **04-Sep-2019**
  - Selection intimation through website : **05-Sep-2019** (After 5.00 PM)
  - Counseling/Admission : **16-Sep-2019**
- j. Course Timings : 9.30 am to 12.30 pm and 2.00 pm to 5.00 pm Monday to Friday
- k. Placement : Placement Assistance shall be provided
- l. Lab Facilities  
The IT Lab is equipped with Intel Xeon Dual Processor based servers from HP, IBM, DELL, HCL, managed gigabit switches and more than 100 networked PCs with internet facility. A variety of software is available which include various flavors of Windows and Linux Operating Systems like Windows, RedHat Enterprise Linux/CentOS 6/7, RT Linux, OpenStack, CloudStack, OpenVAS/Nessus and various commercial and open source development tools, database and cloud servers.

m. Course Contents :

### **Linux and Java (2 weeks)**

Linux environment, commands, built-in tools for data analysis.

Java programming in Linux

### **R (3 weeks)**

Setting up R environment, Variables, Data Types - Vectors, Factors, Lists, Matrices, Arrays, Data Frames, Subsetting. Control Structures, Functions, Debugging tools, R profiling. Reading data - Text, CSV, HTML, JSON, MySQL. Grouping functions-apply, lapply, sapply, mapply. Data visualization - barplot, pie, scatterplot, histogram, scatter matrix, ggplot. Statistical Analysis of data-Summary Statistics, Tabulation methods. Probability distributions in R- Normal distribution, Poisson distribution, Binomial distribution. Correlation and Regression, Hypothesis Testing.

### **Python (3 weeks)**

Python -features, program execution, data structures, List, Dictionary, Tuples, If statements, looping and loop control statements, Functions and Modules, Generators, import statement, namespaces-packages, Class concepts, Exception handling, Regular Expressions, Database access, XML parsing, Python for data analytics - using numpy, matplotlib and pandas,scipy, sci-kit learn and machine learning.

### **BigData & Hadoop (5 weeks)**

Hadoop Architecture and HDFS, Mapreduce Architecture with examples, YARN Architecture, nosql databases with examples, transferring data with Sqoop, data ingestion into Hadoop with Flume, Familiarization of Spark, Mllib and machine learning, Oozie, HBase, Hive and HiveQL, Pig, Distributed processing on a Cluster, Integrating R and Hadoop

### **Mini project (3 weeks)**

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