**DATA SCIENCE COURSE OUTLINE FOR N-TECH**

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| week | Modules/Topics | Application |
| 1 | **INTRODUCTION INTO DATA ANALYTICS**   * Evolution of Data * The Data Eco-system * Data Science Defined * Types of Data Analytics * Opportunities in Data Analytics | This first module introduces you to all of the possibilities that analytics brings. In this course you will learn: |
| 2 | **A CRASH COURSE IN PYTHON**  Getting Started with Python  Understanding Python code [The Zen of Python]  Python Basics – Part I   * Variables * Data Types * Working With Lists * Working With Dictionary | Python is the most important and necessary topic that every data scientist should have knowledge about |
| 3 | **PYTHON BASICS – PART II**   * Collecting User Data * Conditional Statements (if, elif and else) * Understanding Boolean Expressions * Looping Statement (For and While Loops) |  |
| 4 | **PYTHON BASICS – PART III**   * Functions * List, Tuples and Dictionaries * Sets * Object-Oriented Programming |  |
| 5 | **PYTHON FOR DATA SCIENCE**   * Environment Set-up * Jupyter Overview * Working with NumPy * Working With Pandas * Working with Matplotlib | You will learn how to use some of the current tools such as NumPy, Pandas, and Matplotlib. |
| 6 | **STATISTICS IN DATA SCIENCE**   * Types of Data (Quantitative and Qualitative) * Types of Variables * Importing Statistical Concept Used in Data Science * Population and Sampling (Definition, concept and differences) * Measure of Central Tendency in Data * Measure of Variability in Data | When working with data, the knowledge of statistics is necessary and an important skill set that you must have. In this module, you will learn |
| 7 | **PROBABILITY**   * Dependence and Independence * Conditional Probability * Bayes’ Theorem * Random Variables * Distributions * The Central Limit Theorem |  |
| 8 | **EXPLORATORY DATA ANALYSIS**   * Data Collection * Data Scrapping * Data Cleaning * The Correction Matrix | Exploratory analysis helps us to drawn insight for your data. |
| 9 | **DATA VISUALIZATION**   * Matplotlib * Bar Charts * Line Charts * Scattered Plots |  |
| 10 | **LINEAR ALGEBRA**   * Vectors * Matrices |  |
| 11 | **BASICS OF MACHINE LEARNING**   * Supervised Learning * Unsupervised Learning | This is a comprehensive module to help you understand how to make machines or computers interpret human language. |
| 12 | **SUPERVISED MACHINE LEARNING**   * Linear Regression * Logistic Regression * Decision Tree Classifier |  |
| 13 | **SUPERVISED MACHINE LEARNING (CONT.)**   * Random Forest * Naïve Bayes * Support Vector Machine |  |
| 14 | **UNSUPERVISED MACHINE LEARNING**   * K-Mean Clustering * K-Nearest Neighbors |  |
| 15 | **ASSOCIATION RULE MINING** |  |
| 16 | **REINFORCEMENT LEARNING** |  |
|  | **PROJECT BUILDING AND DEFENSE** |  |