Build AI-ready applications in the field of SpaceTech, BioTech and Automobile.

**Python Programming**
Students will learn basic programming constructs and use of libraries.
- Conditions
- Functions
- Loops
- Variables

**Data Processing & Visualization**
Students will learn to process data into a meaningful information.
- Graphs
- Plots
- Panda
- Dataframes

**Data Structures with Python**
Students will learn how to build Python applications with back-end.
- Lists
- Tuples
- Strings
- Dictionaries

**Correlation & Probability**
Students will take a plunge into feature variables and probabilistic estimations.
- Coefficients
- Normal Distribution
- Random Variables
- Conditional Probability

**Inferential Statistics**
Students will make probabilistic estimation
- Hypothesis Testing
- Central Limit Theorem
- Data Density
- Sampling Distribution

**Object Oriented Programming**
Students will learn to create their own Python libraries using OOP
- Abstraction
- Inheritance
- Encapsulation
- Polymorphism

**Machine Learning: Regression**
Student will learn to forecast events using data.
- XGBoost Regression
- Support Vector Regression
- Linear Regression
- Random Forest Regression

**Machine Learning: Classification**
Student will deploy binary classification & multi-class classification models
- XGBoost Classification
- Support Vector Classification
- Logistic Regression
- Random Forest Classification

**K-Means Clustering**
Students will learn to find out the right target variable.
- Inertia
- Dunn Index
- Cluster Tendency
- Algorithm Thinking

**Hierarchical Clustering**
Students will learn to cluster/group data based on features.
- Linkages
- Dendograms
- Cluster Analysis
- Means & Centroid

**Principal Component Analysis**
Students will learn to identify principal components in the dataset.
- Matrices
- Covariance
- Scree Plots
- Basis Transformation

**Model Selection**
Students will learn to choose the best prediction model based on their accuracy.
- Resampling
- Cross-Validation
- Hyperparameter
- Probabilistic Measures

**Unsupervised Machine Learning: Clustering & Modelling**
Students will learn to find out the right target variable.

**Applied Tech Curriculum (Grades 10-12+)**