

## Intern Syllabus

Module	Topic	Subtopics	Hours
Python	Introduction to Python	<ul style="list-style-type: none"> <li>- History and features of Python</li> <li>- Setting up Python environment (Anaconda, Jupyter Notebook)</li> <li>- Writing your first Python program</li> </ul>	
	Basic Syntax and Data Types	<ul style="list-style-type: none"> <li>- Variables and data types (int, float, str, bool)</li> <li>- Basic operations (arithmetic, comparison, logical)</li> <li>- Input and output functions</li> </ul>	
	Control Structures	<ul style="list-style-type: none"> <li>- Conditional statements (if, elif, else)</li> <li>- Loops (for, while)- Break and continue statements</li> </ul>	
	Functions and Modules	<ul style="list-style-type: none"> <li>- Defining and calling functions</li> <li>- Function arguments and return values</li> <li>- Importing and using modules (math, datetime)</li> </ul>	
	Data Structures	<ul style="list-style-type: none"> <li>- Lists, tuples, sets, and dictionaries</li> <li>- List comprehensions</li> <li>- Basic operations on data structures (adding, removing, slicing)</li> </ul>	10 hrs
AI/ML	Introduction to Machine Learning	<ul style="list-style-type: none"> <li>- Definition and applications of machine learning</li> <li>- Types of machine learning (supervised, unsupervised, reinforcement)</li> </ul>	
	Supervised Learning	<ul style="list-style-type: none"> <li>- Linear Regression: Concept and applications, Implementing linear regression using scikit-learn</li> <li>- Logistic Regression: Concept and applications, Implementing logistic regression using scikit-learn</li> <li>- Decision Trees and Random Forests: Concept and applications, Implementing decision trees and random forests using scikit-learn</li> </ul>	
	Unsupervised Learning	<ul style="list-style-type: none"> <li>- Clustering: K-means clustering, Hierarchical clustering, Implementing clustering algorithms using scikit-learn</li> <li>- Dimensionality Reduction: Principal Component Analysis, Implementing PCA using scikit-learn</li> </ul>	
	Classification Models	<ul style="list-style-type: none"> <li>- Support Vector Machines: Concept and applications, Implementing SVM using scikit-learn- K-Nearest Neighbors: Concept and applications, Implementing KNN using scikit-learn</li> </ul>	
	Regression Models	<ul style="list-style-type: none"> <li>- Multiple Linear Regression: Concept and applications, Implementing multiple linear regression using scikit-learn</li> <li>- Polynomial Regression: Concept and applications, Implementing polynomial regression using scikit-learn</li> </ul>	15 hrs

Module	Topic	Subtopics	Hours
Deep Learning	Introduction to Deep Learning	- Basics of neural networks - Applications of deep learning- Setting Up TensorFlow	
	Building Neural Networks	- Creating and compiling a neural network- Understanding layers and activation functions - Training and evaluating a neural network- Regression Problem and Classification	10 hrs
Real-Time Project	Real-Time Project	- Applying learned techniques in a real-time project	15 hrs