



3 STACK ACADEMY

LEARN • BUILD • INNOVATE



www.3stackacademy.com

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Kundapura Udupi

PROFESSIONAL COURSE PROPOSAL

PYTHON • DATA SCIENCE • AI & MACHINE LEARNING • WEB DEVELOPMENT

EXPERT-LED TRAINING | HANDS-ON PROJECTS | INDUSTRY-READY SKILLS

Welcome to 3 Stack Academy

Prepared For

**ASPIRING STUDENTS & FUTURE TECH
PROFESSIONALS**

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3Stack Academy is a technology-focused learning academy dedicated to helping students build strong programming fundamentals and industry-ready skills. Our hands-on approach, real-world projects, and expert guidance prepare learners for academic excellence and future careers in software development, Data Science, and Artificial Intelligence.

2026



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WHY CHOOSE 3STACK ?

At 3Stack Academy, we deliver immersive, in-person tech education that prioritizes hands-on practice, small batch attention, and real-world project experience — because we believe true learning happens in the room.



1. LEARN BY BUILDING

Gain practical knowledge through hands-on coding, real-world projects, and problem-solving, not just theory.



2. EXPERT MENTORSHIP

Learn from experienced instructors with personalized guidance, small batch sizes, and continuous doubt support.



3. BUILD CAREER SKILLS

Follow an industry-relevant curriculum designed to build strong fundamentals, technical confidence, and job-ready skills.

Expert-Led Programs

**LEARN FROM INDUSTRY EXPERTS.
BUILD WITH CONFIDENCE.**

Gain practical, industry-focused skills through expert-led training, hands-on coding, and real-world projects designed to prepare you for today's technology careers.



PYTHON WITH DATA SCIENCE



CORE PYTHON



**AI & MACHINE
LEARNING**



**JAVA AND C
PROGRAMMING**



**WEB
DEVELOPMENT**

Python Programming

Python is one of the world's most popular and beginner-friendly programming languages. It is widely used in software development, web development, automation, Data Science, Artificial Intelligence, and Machine Learning. This course is designed to help students build a strong programming foundation through hands-on coding, real-world examples, and practical projects, preparing them for higher studies and future career opportunities.

Course Level: Beginner

Prerequisites: No Prior Programming Knowledge Required

Learning Approach: Theory + Hands-on Coding + Practical Sessions + Projects



Module 01 | Python Kickstart

Start Your Programming Journey

Introduction to Programming • What is Python? • Features & Real-World Applications • Python Installation • VS Code Setup • Your First Python Program • Python Syntax • Keywords & Identifiers • Comments & Indentation

Module 02 | Variables & Data Types

Learn How Python Stores and Manages Data

Variables • Naming Conventions • User Input & Output •
Type Conversion • Numbers • Boolean Values • Strings •
None Type



Module 03 | Python Operators

Perform Operations and Build Programming Logic

Arithmetic • Assignment • Comparison • Logical •
Bitwise • Membership • Identity • Operator
Precedence

Module 04 | Working with Strings

Master Text Processing in Python

Creating Strings • Indexing & Slicing • String Operations •
String Formatting • Escape Characters • Built-in String
Methods

Module 05 | Decision Making

Make Your Programs Think and Decide

if Statements • if...else • elif • Nested Conditions •
match...case • Building Decision-Based Programs

Module 06 | Loops & Iterations

Automate Repetitive Tasks with Python

for Loops • while Loops • range() • Nested Loops • break • continue • pass • Loop-Based Problem Solving

Module 07 | Python Collections

Organize and Manage Multiple Data Values

Lists • Tuples • Sets • Dictionaries • Accessing Data • Updating Data • Collection Operations • Built-in Methods

Module 08 | Functions

Write Clean, Reusable and Organized Code

Creating & Calling Functions • Parameters • Return Values • Default Arguments • Keyword Arguments • Variable-Length Arguments • Lambda Functions • Introduction to Recursion

Module 09 | Exception Handling

Build Programs That Handle Errors Gracefully

Errors & Exceptions • try • except • else • finally • Multiple Exceptions • raise • Handling Runtime Errors

Module 10 | File Handling

Read, Write and Manage Data Using Files

Opening Files • Reading Data • Writing Data • Appending Data • Text Files • CSV Files • File Operations • with Statement

Module 11 | Modules & Packages

Organize and Extend Your Python Programs

Importing Modules • Built-in Modules • Creating Custom Modules • Reusing Python Code • Introduction to Packages • Package Structure

Module 12 | Object-Oriented Programming

Learn the Foundation of Real-World Application Development

Classes & Objects • Constructors • Instance & Class Variables • Instance Methods • Class Methods • Static Methods • Encapsulation • Inheritance • Polymorphism • Method Overriding • Introduction to Abstraction

MINI PROJECTS

Turn Your Python Knowledge into Working Applications

Calculator , Student Management System , Contact Book , Quiz Application , ATM Simulation , Password Generator , Number Guessing Game etc..

WHAT YOU'LL ACHIEVE

By the end of this course, you will be able to confidently write Python programs, understand programming logic, work with data and collections, build functions, handle files and errors, understand Object-Oriented Programming, and turn your ideas into functional Python applications.

LEARN → CODE → PRACTICE → BUILD

This course is designed with a practical-first learning approach. Every concept is supported by hands-on coding, practical exercises, problem-solving sessions, and project development—helping students move beyond theory and gain real programming experience.

DATA SCIENCE

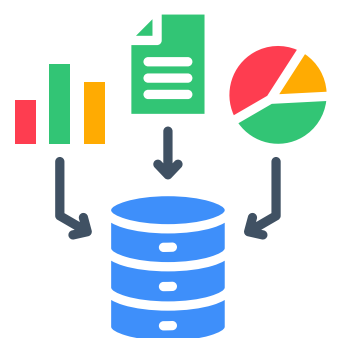
Data Science is the process of collecting, analyzing, and interpreting data to solve real-world problems and support informed decision-making. It combines programming, mathematics, statistics, and machine learning to uncover valuable insights from structured and unstructured data.

In this course, students will learn how to collect, clean, visualize, and analyze data using industry-standard tools and techniques. They will also build predictive models using machine learning algorithms and gain hands-on experience by working on real-world projects.

Course Level: Beginner to Intermediate

Prerequisites: Basic Computer Knowledge | Python Programming Recommended

Learning Approach: Theory + Hands-on Practice + Assignments + Real-World Mini Projects Sessions + Projects



Module 01 | Data Science Kickstart

Step into the World of Data & Analytics

What is Data Science? • Data Science Life Cycle • Real-World Applications • Roles in Data Science • Tools & Technologies • Industry Use Cases • Setting Up Anaconda • Working with Jupyter Notebook

Module 02 | Python for Data Science

Strengthen Your Programming Foundation

Python Refresher • Variables & Data Types • Operators • Conditional Statements • Loops • Functions • Lists, Tuples, Sets & Dictionaries • File Handling • Exception Handling

Module 03 | NumPy for Numerical Computing

Work Efficiently with Numbers and Multidimensional Data

Introduction to NumPy • Creating Arrays • Array Indexing & Slicing • Array Operations • Mathematical Functions • Statistical Operations • Random Module • Reshaping Arrays • Broadcasting

Module 04 | Pandas for Data Analysis

Transform Raw Data into Structured Information

Introduction to Pandas • Series • DataFrames • Reading CSV & Excel Files • Data Selection & Filtering • Sorting Data • Handling Missing Values • Grouping & Aggregation • Merging & Joining DataFrames

Module 05 | Data Visualization

Turn Complex Data into Powerful Visual Stories

Introduction to Data Visualization • Matplotlib • Line Charts • Bar Charts • Pie Charts • Histograms • Scatter Plots • Box Plots • Introduction to Seaborn • Heatmaps • Choosing the Right Visualization

Module 06 | Data Cleaning & Preprocessing

Prepare Raw Data for Accurate Analysis

Understanding Data Quality • Identifying Duplicate Records • Handling Missing Data • Data Transformation • Cleaning Inconsistent Data • Categorical Data Encoding • Feature Scaling • Preparing Analysis-Ready Datasets

Module 07 | Exploratory Data Analysis (EDA)

Discover Patterns, Trends and Insights Hidden in Data

Descriptive Statistics • Data Distribution • Correlation Analysis • Detecting Outliers • Feature Relationships • Univariate Analysis • Bivariate Analysis • Multivariate Analysis • Identifying Trends & Patterns • Generating Business Insights

Module 08 | SQL for Data Science

Extract and Analyze Data Directly from Databases

Database Fundamentals • Tables & Relationships • SELECT Queries • Filtering Data • Aggregate Functions • GROUP BY • HAVING • SQL Joins • Subqueries • Data Analysis Using SQL • Connecting Python with Databases

Module 09 | Machine Learning Fundamentals

Take Your First Step into Predictive Analytics & AI

Introduction to Machine Learning • Types of Machine Learning • Supervised vs Unsupervised Learning • Features & Target Variables • Training and Testing Data • Introduction to Scikit-learn • Building Basic ML Models • Model Prediction • Model Evaluation • Understanding Model Performance

Real-World Data Science Projects

Apply Your Skills to Real Datasets and Business Problems

- **Sales Data Analysis** — Analyze sales performance, revenue trends, products and customer patterns
- **Student Performance Analysis** — Explore academic data and identify factors influencing student performance
- **Employee Analytics Dashboard** — Analyze workforce data and visualize key employee metrics
- **COVID-19 Data Analysis** — Explore trends and patterns using real-world public datasets
- **IPL Data Analysis** — Analyze teams, players, matches and performance statistics
- **Netflix Content Analysis** — Explore movies and TV show datasets to uncover content trends and patterns
- etc...

WHAT YOU'LL ACHIEVE

By the end of this course, you will be able to confidently work with real-world datasets, clean and preprocess raw data, perform Exploratory Data Analysis, create meaningful data visualizations, extract information using SQL, and generate actionable insights from data.

You will gain hands-on experience with Python, NumPy, Pandas, Matplotlib, Seaborn, SQL and Scikit-learn, while building a strong foundation in Data Science, Data Analytics and Machine Learning.

LEARN → ANALYZE → VISUALIZE → DISCOVER → BUILD

This course follows a practical-first learning approach, combining essential concepts with hands-on coding, data analysis exercises, assignments, and real-world projects—helping students develop the practical skills required to begin their journey in Data Science and Machine Learning.

AI & Machine learning

Explore the power of Artificial Intelligence and Machine Learning through hands-on learning and real-world projects. Learn to build intelligent models, analyze data, make predictions, and develop AI-powered applications using modern tools and technologies.

Course Level: Beginner to Advanced

Learning Approach: Theory + Hands-on Coding + Practical Sessions + Assignments + Real-World AI Projects



Module 01 | AI Foundations

Discover the Technology Powering the Future

What is Artificial Intelligence? • History & Evolution of AI • AI vs Machine Learning vs Deep Learning • Real-World Applications of AI • AI in Healthcare, Finance, Education & Business • AI Ethics • Responsible AI

Module 02 | Python for Artificial Intelligence

Build the Programming Foundation for AI Development

Python Refresher • Variables & Data Types • Functions • OOP Concepts • NumPy • Pandas • Data Visualization with Matplotlib & Seaborn • Jupyter Notebook • Google Colab

Module 03 | Mathematics for AI

Understand the Mathematical Concepts Behind Intelligent Systems

Linear Algebra Fundamentals • Probability & Statistics • Mean, Median & Standard Deviation • Vectors & Matrices • Basic Calculus • Distance Metrics • Mathematical Foundations for AI Models

Module 04 | Data Preprocessing

Transform Raw Data into AI-Ready Data

Data Collection • Understanding Data Quality • Cleaning Missing Values • Handling Outliers • Data Transformation • Feature Scaling • Label Encoding • Preparing Features & Labels • Train-Test Split

Module 05 | Machine Learning Fundamentals

Teach Machines to Learn from Data

Machine Learning Workflow • Types of Machine Learning • Features & Labels • Training & Testing Data • Model Training • Model Prediction • Model Evaluation • Cross-Validation • Understanding Bias & Variance

Module 06 | Supervised Machine Learning

Build Models That Learn to Predict and Classify

Linear Regression • Logistic Regression • Decision Trees • Random Forest • K-Nearest Neighbors (KNN) • Support Vector Machine (SVM) • Regression & Classification Problems • Model Comparison • Performance Evaluation

Module 07 | Unsupervised Machine Learning

Discover Hidden Patterns and Groups within Data

Introduction to Clustering • K-Means Clustering • Hierarchical Clustering • Principal Component Analysis (PCA) • Dimensionality Reduction • Anomaly Detection • Pattern Discovery • Customer Segmentation Project

Module 08 | Deep Learning & Neural Networks

Explore the Technology Behind Modern AI Systems

Introduction to Deep Learning • Neural Networks • Artificial Neurons • Layers & Network Architecture • Activation Functions • Forward Propagation • Backpropagation • Introduction to TensorFlow • Keras • Building Your First Deep Learning Model

Module 09 | Natural Language Processing (NLP)

Teach Machines to Understand Human Language

Introduction to NLP • Text Cleaning & Preprocessing • Tokenization • Word Embeddings • Text Representation • Sentiment Analysis • Text Classification • Understanding Conversational AI • Building a Basic Chatbot

Module 10 | Computer Vision

Teach Machines to Understand Images and Visual Information

Introduction to Computer Vision • Image Processing Fundamentals • OpenCV • Working with Images • Image Classification • Face Detection • Object Detection • Working with Camera Inputs • Building Real-Time Computer Vision Applications

Module 11 | Generative AI & Large Language Models

Build Intelligent Applications with Modern Generative AI

Introduction to Generative AI • Understanding Large Language Models (LLMs) • Prompt Engineering • Effective Prompt Design • Working with AI APIs • Using OpenAI APIs • Hugging Face Basics • Introduction to Pre-Trained Models • AI Assistants • Building AI-Powered Chatbots

Module 12 | AI Deployment & Production

Take Your AI Models from Development to Real-World Applications

Model Serialization • Saving & Loading AI Models • Streamlit Basics • Building Interactive AI Applications • Introduction to Flask & FastAPI • Creating APIs for AI Models • Deploying AI Models • Git & GitHub • Version Control • Model Hosting • Introduction to Production AI Applications



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Capstone AI Projects

Transform Your Knowledge into Real-World AI Applications

- **AI Chatbot** — Build an intelligent conversational application capable of interacting with users
- **Image Classification System** — Develop a deep learning model to classify images into different categories
- **Handwritten Digit Recognition** — Build a neural network to recognize handwritten numbers
- **Spam Email Detector** — Create an NLP-based system to identify and classify spam messages
- **Movie Recommendation System** — Develop an intelligent recommendation engine based on user preferences
- **Customer Churn Prediction** — Build a machine learning model to identify customers who are likely to leave a business
- **etc..**

WHAT YOU'LL ACHIEVE

By the end of this course, you will understand the fundamental concepts of Artificial Intelligence, Machine Learning and Deep Learning and gain practical experience in developing intelligent applications.

You will learn to prepare and analyze data, train and evaluate machine learning models, build neural networks, process natural language, work with computer vision, explore Generative AI and Large Language Models, and deploy AI-powered applications.

Students will gain hands-on experience with technologies and tools including Python, NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, TensorFlow, Keras, OpenCV, Streamlit, Git, GitHub, AI APIs and Large Language Models.

LEARN → TRAIN → PREDICT → GENERATE → DEPLOY

This course follows a project-driven learning approach, combining AI concepts with hands-on coding, model development, experimentation, and real-world projects. Students will progress from understanding AI fundamentals to building and deploying practical AI-powered applications.

Web Development

Master modern web development and build responsive, dynamic web applications.

Learn HTML, CSS, JavaScript, backend frameworks, and databases.

Gain hands-on experience with Git, GitHub, AWS, and cloud deployment.

Build real-world projects and develop industry-ready full-stack development skills.

Course Level: Beginner to Advanced

Learning Approach: Theory + Hands-on Coding + Practical Sessions + Real-World Projects



Module 01 | HTML

Build the Structure of Modern Websites

HTML Fundamentals • Document Structure • Headings & Paragraphs • Links • Images • Lists • Tables • Forms & Input Elements • Semantic HTML • HTML5 Elements • Audio & Video • Iframes • Meta Tags



Module 02 | CSS

Design Beautiful and Responsive Websites

CSS Fundamentals · Selectors · Colors & Backgrounds · Typography · Box Model · Margin & Padding · Borders & Shadows · Display Properties · Positioning · Flexbox · CSS Grid · Media Queries · Responsive Web Design · Transitions · Transformations · Animations

Module 03 | JavaScript

Make Your Websites Interactive and Dynamic

JavaScript Fundamentals · Variables & Data Types · Operators · Conditional Statements · Loops · Functions · Arrays · Objects · DOM Manipulation · Event Handling · Form Validation · ES6+ Features · JSON · Local Storage · Fetch API · Promises · Async/Await

Module 04 | Backend Frameworks

Build Powerful and Dynamic Web Applications

Python Backend Development · Django Framework · Flask Framework · Project Structure · URLs & Routing · Views · Templates · Models · ORM · Forms · User Authentication · Sessions · CRUD Operations · File & Image Uploads · Admin Panel · REST API Basics · Frontend & Backend Integration

Module 05 | Databases

Store, Manage and Access Application Data

Database Fundamentals • Relational & NoSQL Databases • Database Design • Tables & Collections • CRUD Operations • SQL Queries • MySQL • PostgreSQL • MongoDB • Database Relationships • Joins • Data Filtering • Database Integration with Django & Flask

Module 06 | Git & GitHub

Manage Your Code and Collaborate Like a Developer

Version Control • Git Setup • Git Repositories • Add & Commit • Push & Pull • Branching • Merging • Clone • GitHub Repositories • Pull Requests • Resolving Conflicts • Team Collaboration • Project Version Management

Module 07 | AWS & Deployment

Deploy Your Web Applications to the Cloud

Introduction to Cloud Computing • AWS Fundamentals • AWS EC2 • Server Setup • Application Deployment • Django Deployment • Flask Deployment • Database Deployment • Domain Configuration • DNS • SSL/HTTPS • Static & Media Files • Environment Variables • Production Hosting

Real-World Projects

Build Complete Web Applications from Scratch

- Responsive Business Website
- E-Commerce Web Application
- Student Management System
- Blog Web Application
- Admin Dashboard
- User Authentication System etc..

WHAT YOU'LL LEARN

By the end of this course, you will be able to build responsive websites using HTML, CSS and JavaScript, develop backend applications using Django and Flask, manage data using MySQL, PostgreSQL and MongoDB, manage source code with Git & GitHub, and deploy web applications using AWS.

DESIGN → DEVELOP → CONNECT → MANAGE → DEPLOY

Learn the complete web development process through hands-on coding, practical sessions and real-world projects.



Industry-Integrated Learning with GreyCrust Solutions

Learn Beyond the Classroom with Real Software
Industry Exposure



This course is aligned with the practical development environment of **GreyCrust Solutions**, providing students with exposure to real-world software development workflows, industry-standard technologies, practical coding practices, and project-based learning.

Students gain insights into how professional software projects are planned, developed, managed, and deployed—helping bridge the gap between academic learning and industry expectations.



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YOUR FUTURE STARTS HERE

Transform your passion for technology into real-world skills with industry-focused training, hands-on learning, and practical project experience.

Build Skills. Create Projects. Become Industry-Ready.

JOIN NOW

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