



## **Data Science and AI Certification Course Outline**

### **MODULE 1: What is Data Science & AI?**

- What is data? What is intelligence in machines?
- Real-world AI: voice assistants, chatbots, game bots
- How data helps AI learn
- Fun activity: AI vs human guessing game

### **MODULE 2: Data Collection & Organization**

- Create tables of favorite games, foods, or animals
- Organize data into rows and columns
- Use spreadsheets or Google Sheets
- Activity: Conduct a class/family survey

### **MODULE 3: Exploring Data – Patterns & Predictions**

- What is a pattern?
- Sort and filter data to find trends
- Use pie charts, bar graphs
- Activity: Make predictions based on simple data (e.g., Which fruit is most loved?)

### **MODULE 4: Visualizing Data Like a Pro**

- Graphs, infographics, dashboards
- Tools: Canva, Google Sheets, or Scratch extensions
- Project: Visualize your own survey results

### **MODULE 5: How Machines Learn – Intro to Machine Learning**

- Supervised vs unsupervised learning
- Learn with images, numbers, or words
- Train a model to sort cats vs dogs using online tools like Teachable Machine
- Analogy: AI learns like we do — with examples!

## **MODULE 6: Talking AI – Voice, Text & Chatbots**

- What is a chatbot?
- Examples: Siri, Alexa, ChatGPT
- Create a simple chatbot using block coding or Google Dialogflow
- Roleplay game: Be the bot and guess human questions

## **MODULE 7: Ethics in AI & Smart Decisions**

- Can AI be unfair?
- Real-life examples of biased machines
- Activity: Fair AI judge – decide what’s fair vs unfair in data decisions
- Discuss why diverse data matters

## **MODULE 8: Final Project – Build a Smart AI Idea**

- Choose a problem to solve (e.g., smart pet, learning app, traffic helper)
- Collect data → Organize → Visualize → Build idea
- Present it as a poster, video, or prototype
- Earn your “**Young AI Explorer**” title

## **Bonus Material**

- Helps kids plan data collection, use case, and logic flow
- Flashcards with definitions like model, prediction, bias, algorithm
- Bar, pie, and line chart templates for hand-drawn or computer use
- Step-by-step mini guide to build your first chatbot
- Editable completion certificate to reward effort and creativity

