



**Age 13-18 YEARS**  
**Grade 8+**

# Coding Masters

Develop strong foundations in Python for Building Intelligent Games, Chatbots, Automated Systems, Databases, Web Applications and Artificial Intelligence to enhance human productivity.

**Mentor Led, Interactive 1-on-1 live classes**  
**Course designed by IIT-IIM Alumni and PHD Professors**

Coding Makes Kids Smarter!

Coding Masters Certificate in  
partnership with LEGO Education

## Our unique "5C" teaching methodology



**Connect**  
Real world  
examples



**Concept**  
Demystify the  
topics



**Code**  
Digital Creations



**Contemplate**  
Analyse viable  
possibilities



**Continue**  
Ideate & Practice  
Learning



## Testimonials

There were so many options available online, but only RoboGenius was able to explain me everything in simple words and answer all my questions. Together we identified the right fit course for my daughter. She is very happy learning coding here. I am glad that I went with RoboGenius.

**Monika Sharma, Parent, India** 

My child has become more confident and is able to articulate things in a better manner to solve problems.

**Abdul Rashid, Parent, UAE** 

I have learnt a lot about coding Artificial Intelligence systems and look forward to applying this knowledge in my projects.

**Ayomide Ladele, Student, U.K.** 

Great course, excellent faculty. My kid loves robogenius coding classes.

**Kasturi Vivek, Parent, India** 





# Course Descriptor



**Mentor Led, Interactive 1-on-1 live classes**  
**Course designed by IIT-IIM Alumni and PHD Professors**

Develop strong foundations in building complex Artificial Intelligence Systems that think and act like humans.

Google Colab and Spyder IDE for coding A.I. in Python Programming Language

MySQL Workbench and SQL databases.



HTML, CSS and JavaScript.

Collect, Process, Store and Visualize high quality data

Code A.I. powered games, chatbots, prediction and forecasting tools and web apps.



Learn basics of Python for run-time data storage, variables, operations, algorithms designs, user interaction, data validation, functions, libraries and 2D Arcade games.

## Coding Masters

# Beginner

1-24 Sessions

#	Activity	Learning Outcome
1	Data Outputs	Printing outputs on the console
2	Data Types and Variables	Store data in the correct form
3	Data Inputs & Type Casting	Take data inputs from user
4	Conditions	Comparison Operators and If elif else
5	Data Generation	Libraries & Random Data Generation
6	Project 1	Rock Paper Scissors
7	Arithmetic Operators	Do Simple Calculations
8	Arithmetic Operations	BEDMAS/Order/ Precedence
9	Complex Conditions	Nested if and logical operator
10	Project 2	Rock Paper Scissors Code Optimization
11	Loops	For loops
12	Loops	Nested For Loop
13	Loops	Draw Characters
14	Loops	Draw Patterns
15	Loops	Repeat within a repeating block
16	Project 3	Rock Paper Scissors - user defined rounds & Maintain Score Card
17	Loops	While Loops
18	Loops	Nested While Loops
19	Loops	Draw Characters
20	Loops	Draw Patterns
21	Project 4	Guess the number
22	Challenge	Slot Machine
23	Challenge	Slot Machine
24	Challenge	Project Report

## Coding Masters

# Beginner Plus

25-48 Sessions

#	Activity	Learning Outcome
25	Strings	Dealing with and manipulating text data
26	Strings	String Methods
27	Strings	Excercises
28	Project 5	Fizz Buzz Challenge & Optimization
29	Project 6	Word Count Statistics
30	Regular Expressions	Construction and Matching
31	Regular Expressions	Validate website and email
32	Regular Expressions	Validate phone number and password
33	Functions	Encapsulate task for multiple use
34	Functions	Excercises
35	Project 7	Calculator
36	Functions	Recursive functions
37	Project 8	Sudoku
38	Project 8	Sudoku
39	Data Structures	Store & manipulate multiple values 1D lists & Comprehensions
40	Data Structures	Store and manipulate multiple values in 2D lists
41	Project 9	Student Management System
42	Project 9	Student Management System
43	Turtle	Functions for 2D arcade games
44	Project 10	Controlling game objects and characters for Snake Game
45	Project 10	Interaction & Collision with other characters
46	Project 10	Reward and Penalties
47	Project 10	Adding sound and score cards to the game
48	Project 10	Project Report

Learn data structures, error handling, long-term data storage, Graphical User Interfaces, UML, Classes, Inheritance, Abstraction, Data Sorting, Linked List and Advanced Games.

## Coding Masters

# Intermediate

49-72 Sessions

#	Activity	Learning Outcome
49	Data Structures	Tuples
50	Data Structures	Dictionary & Comprehensions
51	Data Structures	Dictionary in Dictionary
52	Data Structures	Solve Challenges
53	Project 11	Create Translator
54	Project 12	Analyze frequencies
55	Project 12	Find Trends
56	Data Structures	Sets & Comprehensions
57	Search	Linear & Binary
58	Exceptions & Errors	Overcome the coding bugs
59	Exceptions & Errors	Challenge
60	Files	Read and Write Data from Files
61	Files	Challenges
62	Project 13	Design Algorithm
63	Project 13	Unstructured to Structured Data
64	Project 13	Validate and Store Structured Data in a File
65	Graphical User Interface	Introduction to GUI
66	Graphical User Interface	GUI Functions
67	Project 14	Student Management System
68	Project 14	Student Management System
69	Project 15	Student-led Project
70	Project 15	Student-led Project
71	Project 15	Convert into desktop app
72	Project 15	Project Report

## Coding Masters

# Advanced

73-96 Sessions

#	Activity	Learning Outcome
73	UML	Create classes diagram
74	UML	Create classes diagram
75	Object Oriented Programming	Create classes, attributes, methods & instances
76	Object Oriented Programming	Class Exercises
77	Project 16	Student Management System
78	Project 16	Student Management System
79	Inheritance	Single Class
80	Inheritance	Multiple Classes
81	Inheritance	Inheritance Exercises
82	Project 17	Deck of Cards
83	Data Sorting	Bubble Sort
84	Data Sorting	Selection Sort
85	Data Sorting	Insertion Sort
86	Data Sorting	Merge Sort
87	Data Sorting	Heap Sort
88	LinkedList	Nodes
89	Linked Lists	Exercises
90	Linked Lists	Doubly linked, circular and sentinel
91	Linked Lists	Exercises
92	Linked Lists	Exercises
93	Project 18	Tic-Tac-Toe
94	Project 18	Tic-Tac-Toe
95	Project 18	Tic-Tac-Toe app
96	Project 19	Project Report

Learn arrays, matrices, numerical analysis, data visualisation, Web Scrapping, SQL and NoSQL databses, HTML, CSS, Javascript, Bootstrap and Djanogo to develop responsive web applications modelling real world.

## Coding Masters

# Advanced Plus

97-120 Sessions

#	Activity	Learning Outcome
97	NumPy	Arrays and data types
98	NumPy	Operations and manipulations
99	Visualization	Line & Scatter plots
100	Visualization	Stacked & Bar Charts
101	Visualization	Histogram, Pie Charts and Images
102	Project 20	Covid-19
103	Database	MySQL & EER Diagram
104	Database	CURD
105	Database	CURD
106	Database	JOINS
107	Database	MySQL & Python
108	HTML	Create Webpage
109	HTML	Add images, videos, and tables to webpages
110	CSS	Add styles to webage
111	Web Scrapping	Fetch data from website
112	Project 21	Fetch data from website
113	Project 21	Write data into database
114	JavaScript	JavaScript APIs
115	BootStrap	Responsive mobile-first websites
116	BootStrap	Responsive mobile-first websites
117	Project	Create blueprint for your website
118	Project 22	Code your own website
119	Project 22	Code your own website
120	Project 22	Make your website live

## Coding Masters

# Expert

121-144 Sessions

#	Activity	Learning Outcome
121	Django	Django Setup & MVT
122	Django	URL, View and HTML rendering
123	Django	URL, View and HTML rendering (Student-led)
124	Web App Mega Project	Web app & database brainstorming
125	Web App Mega Project	Model and SQLite databse setup
126	Web App Mega Project	Django Template Language
127	Web App Mega Project	Admin Dashboard
128	Web App Mega Project	List View, HTML loops and Hyperlinks
129	Web App Mega Project	Detail View
130	Web App Mega Project	Create View
131	Web App Mega Project	Forms
132	Web App Mega Project	Update View
133	Web App Mega Project	Delete View
134	Web App Mega Project	User Authetication
135	Web App Mega Project	User Authetication
136	Web App Mega Project	User Authetication
137	Web App Mega Project	Custom Queries
138	Web App Mega Project	Custom Queries
139	Web App Mega Project	Decorators
140	Web App Mega Project	File uploads & File size validation
141	Web App Mega Project	App Testing
142	Web App Mega Project	Git Hub
143	Web App Mega Project	Online Hosting of App
144	Web App Mega Project	Online Hosting of App



### Give your child the RoboGenius Online Advantage!

RoboGenius Academy is India's first company to establish world class labs to teach Coding, Robotics and Artificial Intelligence to kids. Coding courses at RoboGenius are designed by team of Engineers, PhD professors, IIT-IIM Alumni and is enriched with our experience of more than a decade in teaching coding to kids.

Our Unique 5C teaching methodology, well-structured curriculum and mentors who are engineers make coding fun to learn and easy to understand. Kids at RoboGenius become creative and innovative problem solvers using A.I. technologies of today and tomorrow.

RoboGenius Kids are smarter and successful.



---

SCO 39, Sector 56, Gurgaon-122001, Haryana, India

**[robogenius.com](http://robogenius.com) | [online@robogenius.com](mailto:online@robogenius.com)**

