MASAI SCHOOL

Block - 36

CURRICULUM COURSE CATALOG

CODING & DSA & CSBT

13th May 2024 - 16th June 2024

# 

# PR101

## Programming 101

### 

### Course Details

#### Prerequisite - *Basic Maths, Analytical Skills*

#### Instructor- *Kapil*

#### Duration - *5 Weeks*

#### Level - *1*

#### Assignment Time - *38 hrs*

### Course Topics:

* Introduction to Python
* Mathematical Operator
* Comparison Operator
* Conditional Statement
* Loops, Strings, Arrays
* StringBuilder, ArrayList
* Key Value Pair
* Multidimensional Arrays
* Bruteforce.

### Tools & Software

#### Replit

### Evaluations

* PR101\_S3\_E1
* PR101\_S4\_E2
* PR101\_S5\_E3
* PR101\_S5\_E4

# DB101

## Databases (SQL and MongoDB)

### 

### Course Details

#### Prerequisite - *PR101*

#### Instructor- *Bishal*

#### Duration - *5 Weeks*

#### Level - *2*

#### Assignment Time - *38 hrs*

### Course Topics:

* SQl
* MongoDB
* Database Design

### Tools & Software

#### MySQL workbench

#### Mongo Shell

### Evaluations

* DB101\_S2\_E1
* DB101\_S3\_E2
* DB101\_S4\_E3
* DB101\_S5\_E4

# WEB204

## Web Development 204

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### Course Details

#### Prerequisite - *DB101*

#### Instructor - *Rahul Rajeevan*

#### Duration - *4 Weeks*

#### Level - *3*

#### Assignment Time - *24 hrs*

### Course Topics:

* Advanced HTML
* Advanced CSS
* Figma
* SASS

### Tools & Software

#### VSCode

#### GIT

#### Linters

#### Gen AI - ChatGPT

### Evaluations

* WEB204\_S2\_E1
* WEB204\_S3\_E2
* WEB204\_S4\_E3
* WEB204\_S5\_E4

# JS204

## Advanced & Modern Javascript

### 

### Course Details

#### Prerequisite - *WEB204*

#### Instructor - *Adarsha*

#### Duration - *4 Weeks*

#### Level - *4*

#### Assignment Time - *38 hrs*

### Course Topics:

* Javascript Introduction, Variables, Mathematical Operators, Conditional Statements
* Loops, Arrays, Strings, Objects, Functions, Common Array methods in depth
* Object creation, Prototypical inheritance
* This keyword, Pagination, Authentication
* CRUD Operations, Import & Export
* Using GENAI to self-learn concepts

### Tools & Software

#### VSCode

#### GIT

### Evaluations

* JS204\_S2\_E1
* JS204\_S3\_E2
* JS204\_S4\_E3
* JS204\_S5\_E4

# RCT104

## React JS

### 

### Course Details

#### Prerequisite - *WEB204, JS204*

#### Instructor- *Aditya*

#### Duration - *4 Weeks*

#### Level - *5*

#### Assignment Time - *38 hrs*

### Course Topics:

* State, Props, Components, Events, Effects, Ref.
* Context API, Routing, Deployment, Axios.
* Chakra UI, Redux.
* Custom Hooks, Optimisation hooks

### Tools & Software

#### VSCode

#### GIT

#### Node

#### NPM

### Evaluations

* RCT104\_S2\_E1
* RCT104\_S3\_E2
* RCT104\_S4\_E3
* RCT104\_S5\_E4

# NEM104

## Node Services Development

### 

### Course Details

#### Prerequisite - *JS204*

#### Instructor - *Pulkit Tyagi*

#### Duration - *4 Weeks*

#### Level - *4*

#### Assignment Time - *38 hrs*

### Course Topics:

* Node,
* Express

### Tools & Software

#### VSCode

#### GIT

#### Node

#### NPM

### Evaluations

* NEM104\_S2\_E1
* NEM104\_S3\_E2
* NEM104\_S4\_E3
* NEM104\_S5\_E4

PBS101

## Introduction to Problem Solving

### 

### Course Details

#### Prerequisite - *None*

#### Instructor- *Faisal Mirza*

#### Duration - *5 Weeks*

#### Level - *1*

#### Assignment Time - *40 hrs*

### Course Topics:

* Conditionals & Loops
* Arrays, String,
* Key-Value Pairs and Bruteforce.

### Evaluations

* PBS101\_S2\_E1
* PBS101\_S3\_E2
* PBS101\_S4\_E3
* PBS101\_S5\_EU

PBS201

## Data Structures & Algorithms - Candidate Master

### 

### Course Details

#### Prerequisite - *PBS101*

#### Instructor- *Aishwarya*

#### Duration - *5 Weeks*

#### Level - *2*

#### Assignment Time - *40 hrs*

### Course Topics:

* Time and Space Complexity
* Two Pointer and Sliding Window
* Sortings
* Stack and Queue
* Linked List
* Searching
* Recursion

### Evaluations

* PBS201\_S2\_E1
* PBS201\_S3\_E2
* PBS201\_S4\_E3
* PBS201\_S5\_E4
* PBS201\_S5\_EU

PBS302

## Data Structures & Algorithms - Candidate Master

### 

### Course Details

#### Prerequisite - *PBS201*

#### Instructor- *Aishwarya*

#### Duration - *4 Weeks*

#### Level - *3*

#### Assignment Time - *26 hrs*

### Course Topics:

* Binary Search
* Abstract Binary Search
* Recursion
* Backtracking
* Stacks, Queue
* Linked List
* Greedy

### Evaluations

* PBS302\_S2\_E1
* PBS302\_S3\_E2
* PBS302\_S4\_E3
* PBS302\_S5\_E4
* PBS302\_S5\_EU

PBS402

## Data Structures & Algorithms - Candidate Master

### 

### Course Details

#### Prerequisite - *PBS302*

#### Instructor- *Akshay / Ankit*

#### Duration - *4 Weeks*

#### Level - *4*

#### Assignment Time - *20 hrs*

### Course Topics:

* DP
* Tree
* Graphs

### Evaluations

* PBS402\_S2\_E1
* PBS402\_S3\_E2
* PBS402\_S4\_E3
* PBS402\_S5\_E4
* PBS402\_S5\_EU

PBS502

## Data Structures & Algorithms - Candidate Master

### 

### Course Details

#### Prerequisite - *PBS402*

#### Instructor- *Albin*

#### Duration - *4 Weeks*

#### Level - *5*

#### Assignment Time - *20 hrs*

### Course Topics:

* Complete DSA Revision with PSC and Leetcode / OJ contests

### Evaluations

* PBS502\_S2\_E1
* PBS502\_S3\_E2
* PBS502\_S4\_E3
* PBS502\_S5\_E4
* PBS502\_S5\_EU

PBS602

## Data Structures & Algorithms - Candidate Master

### 

### Course Details

#### Prerequisite - *PBS502*

#### Instructor - *Albin*

#### Duration - *4 Weeks*

#### Level - *5*

#### Assignment Time - *20 hrs*

### Course Topics:

* Complete DSA Revision through LeetCode contests

### Evaluations

* PBS602\_S2\_E1
* PBS602\_S3\_E2
* PBS602\_S4\_E3
* PBS602\_S5\_E4
* PBS602\_S5\_EU