

CODR Academy : Syllabus

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It is notified for information of all concerned that the CA Official in it's meeting held on 26/06/24 approved this complete syllabus for CODR Academy and issued on 27/06/24 as laid down in the accompanying pamphlet :

Content Department	
Language Course	<ol style="list-style-type: none"> 1. Basic Language Train 2. DSA 3. Gradation Certificate
Web Development	<ol style="list-style-type: none"> 1. Basic Web Development 2. Advanced Frontend 3. React 4. Mern Dev 5. Full Stack
Mathematical Aptitude	<ol style="list-style-type: none"> 1. Numerical Analysis 2. Statistics
ML/AI	<ol style="list-style-type: none"> 1. ML Basic 2. ML Advanced 3. AI Dev 4. ML with R 5. ML with Python
Design	<ol style="list-style-type: none"> 1. Graphic Design 2. UI/UX 3. 3D tool: Blender
Self Enhancement Zone	<ol style="list-style-type: none"> 1. Discord Management and Bot Management 2. OS 3. Github & GitLab 4. Canva 5. Advanced PPT 6. Photoshop 7. Lightroom
Service Department	
Academics and Certification	<ol style="list-style-type: none"> 1. Mock and Rock 2. Project Documentation 3. Thesis Documentation
Public Commercial	<ol style="list-style-type: none"> 1. Custom Desktop Look 2. Personal Portfolio Design 3. Commercial Website Design 4. Poster and related Design 5. Album Design



1 Detailed Syllabus

Content Department

A) Coding Language Course

1. Basic Coding Language Training

- Introduction to programming concepts
- Syntax and basic constructs
- Variables, data types, and operators
- Control structures: loops and conditional statements
- Functions and modular programming

2. Data Structures and Algorithms (DSA)

- Introduction to data structures (arrays, linked lists, stacks, queues)
- Basic algorithms (sorting, searching)
- Advanced data structures (trees, graphs)
- Algorithm design techniques (greedy,)

B) Web Development

1. Basic Web Development

- HTML, CSS fundamentals
- Introduction to responsive design
- Building static web pages

2. Advanced Frontend Development

- JavaScript fundamentals
- DOM manipulation
- Asynchronous programming (Promises, async/await)

3. React Development

- Introduction to React framework
- JSX syntax and components
- State management with Redux

4. MERN Stack Development

- MongoDB fundamentals
- Express.js basics
- Node.js backend development



- Integration with React frontend

5. Full Stack Development

- RESTful API design and implementation
- Authentication and authorization
- Deployment strategies and continuous integration

C) Mathematical Aptitude

1. Numerical Analysis

- Numerical methods for solving equations
- Interpolation and approximation techniques
- Numerical differentiation and integration

2. Statistics

- Descriptive statistics (mean, median, mode)
- Probability theory
- Inferential statistics (Chi Square Distribution, hypothesis testing)

D) ML/AI

1. Machine Learning Basics

- Introduction to machine learning
- Linear regression, logistic regression
- Model evaluation and validation techniques

2. Advanced Machine Learning

- Decision trees and ensemble methods
- Support Vector Machines (SVM)
- Neural networks and deep learning basics

3. AI Development

- Natural Language Processing (NLP) basics
- Computer Vision fundamentals
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4. Machine Learning with R

- R programming language basics
- Data manipulation with tidyverse



- Statistical modeling and machine learning packages

5. Machine Learning with Python

- Python libraries for data analysis (NumPy, Pandas)
- Scikit-learn for machine learning
- Deep learning frameworks (TensorFlow, PyTorch)

E) Design

1. Graphic Design

- Design principles and elements
- Adobe Illustrator basics

2. UI/UX Design

- User interface design fundamentals
- Usability principles
- Prototyping tools (Adobe XD, Sketch)

3. 3D Modeling and Animation (using Blender)

- Introduction to Blender interface
- Modeling techniques
- Animation principles

F) Self Enhancement Zone

1. Discord Management and Bot Management

- Setting up and managing Discord servers
- Bot creation and customization

2. Operating Systems

- Fundamentals of operating systems
- Linux basics and command-line interface

3. GitHub & GitLab

- Version control with Git
- Collaborative software development workflows

4. Canva

- Designing with Canva
- Creating visual content for social media



5. Advanced PowerPoint Techniques
 - Presentation design principles
 - Animation and multimedia integration
6. Photoshop
 - Image editing fundamentals
 - Advanced photo manipulation techniques
7. Lightroom
 - Digital photo management
 - Basic editing and enhancement techniques

Service Department

A) Academics and Certification

1. Mock and Rock (Mock Exams)
 - Mock exam preparation sessions
 - Test-taking strategies and tips
2. Project Documentation
 - Writing project proposals and reports
 - Documentation standards and templates
3. Thesis Documentation
 - Thesis structure and formatting guidelines
 - Research methodology and literature review

B) Public Commercial

1. Custom Desktop Look Design
 - Customizing desktop environments (Windows, Linux)
 - Creating themes and visual styles
2. Personal Portfolio Design
 - Building an online portfolio
 - Showcase of projects and achievements
3. Commercial Website Design



- E-commerce website development
- User experience optimization

4. Poster and Related Design

- Poster design principles
- Marketing and promotional materials

5. Album Design

- Album cover design
- Layout and typography considerations



2 In Tabulated Form

Detailed Syllabus

Content Department

A) Coding Language Course	
1. Basic Coding Language Training	<ul style="list-style-type: none"> • Introduction to programming concepts • Syntax and basic constructs • Variables, data types, and operators • Control structures: loops and conditional statements • Functions and modular programming
2. Data Structures and Algorithms (DSA)	<ul style="list-style-type: none"> • Introduction to data structures (arrays, linked lists, stacks, queues) • Basic algorithms (sorting, searching) • Advanced data structures (trees, graphs) • Algorithm design techniques (greedy,)
B) Web Development	
1. Basic Web Development	<ul style="list-style-type: none"> • HTML, css fundamentals • Introduction to responsive design • Building static web pages
2. Advanced Frontend Development	<ul style="list-style-type: none"> • JavaScript fundamentals • DOM manipulation • Asynchronous programming (Promises, async/await)



3. React Development	<ul style="list-style-type: none"> • Introduction to React framework • JSX syntax and components • State management with Redux
4. MERN Stack Development	<ul style="list-style-type: none"> • MongoDB fundamentals • Express.js basics • Node.js backend development • Integration with React frontend
5. Full Stack Development	<ul style="list-style-type: none"> • RESTful API design and implementation • Authentication and authorization • Deployment strategies and continuous integration
C) Mathematical Aptitude	
1. Numerical Analysis	<ul style="list-style-type: none"> • Numerical methods for solving equations • Interpolation and approximation techniques • Numerical differentiation and integration
2. Statistics	<ul style="list-style-type: none"> • Descriptive statistics (mean, median, mode) • Probability theory • Inferential statistics (Chi Square Distribution, hypothesis testing)



D) ML/AI	
1. Machine Learning Basics	<ul style="list-style-type: none"> • Introduction to machine learning • Linear regression, logistic regression • Model evaluation and validation techniques
2. Advanced Machine Learning	<ul style="list-style-type: none"> • Decision trees and ensemble methods • Support Vector Machines (SVM) • Neural networks and deep learning basics
3. AI Development	<ul style="list-style-type: none"> • Natural Language Processing (NLP) basics • Computer Vision fundamentals •
4. Machine Learning with R	<ul style="list-style-type: none"> • R programming language basics • Data manipulation with tidyverse • Statistical modeling and machine learning packages
5. Machine Learning with Python	<ul style="list-style-type: none"> • Python libraries for data analysis (NumPy, Pandas) • Scikit-learn for machine learning • Deep learning frameworks (TensorFlow, PyTorch)
E) Design	



1. Graphic Design	<ul style="list-style-type: none"> • Design principles and elements • Adobe Illustrator basics
2. UI/UX Design	<ul style="list-style-type: none"> • User interface design fundamentals • Usability principles • Prototyping tools (Adobe XD, Sketch)
3. 3D Modeling and Animation (using Blender)	<ul style="list-style-type: none"> • Introduction to Blender interface • Modeling techniques • Animation principles
F) Self Enhancement Zone	
1. Discord Management and Bot Management	<ul style="list-style-type: none"> • Setting up and managing Discord servers • Bot creation and customization
2. Operating Systems	<ul style="list-style-type: none"> • Fundamentals of operating systems • Linux basics and command-line interface
3. GitHub & GitLab	<ul style="list-style-type: none"> • Version control with Git • Collaborative software development workflows



4. Canva	<ul style="list-style-type: none">• Designing with Canva• Creating visual content for social media
5. Advanced PowerPoint Techniques	<ul style="list-style-type: none">• Presentation design principles• Animation and multimedia integration
6. Photoshop	<ul style="list-style-type: none">• Image editing fundamentals• Advanced photo manipulation techniques
7. Lightroom	<ul style="list-style-type: none">• Digital photo management• Basic editing and enhancement techniques



Service Department

A) Academics and Certification	
1. Mock and Rock (Mock Exams)	<ul style="list-style-type: none"> • Mock exam preparation sessions • Test-taking strategies and tips
2. Project Documentation	<ul style="list-style-type: none"> • Writing project proposals and reports • Documentation standards and templates
3. Thesis Documentation	<ul style="list-style-type: none"> • Thesis structure and formatting guidelines • Research methodology and literature review
B) Public Commercial	
1. Custom Desktop Look Design	<ul style="list-style-type: none"> • Customizing desktop environments (Windows, Linux) • Creating themes and visual styles
2. Personal Portfolio Design	<ul style="list-style-type: none"> • Building an online portfolio • Showcase of projects and achievements
3. Commercial Website Design	<ul style="list-style-type: none"> • E-commerce website development • User experience optimization



4. Poster and Related Design	<ul style="list-style-type: none">• Poster design principles• Marketing and promotional materials
5. Album Design	<ul style="list-style-type: none">• Album cover design• Layout and typography considerations



3 Class Duration :

Content Department

A) Coding Language Course

Course	Topics	Duration
Basic Coding Language Training	<ul style="list-style-type: none">• Introduction to programming concepts• Syntax and basic constructs• Variables, data types, and operators• Control structures: loops and conditional statements• Functions and modular programming	3 Months
Data Structures and Algorithms (DSA)	<ul style="list-style-type: none">• Introduction to data structures (arrays, linked lists, stacks, queues)• Basic algorithms (sorting, searching)• Advanced data structures (trees, graphs)• Algorithm design techniques (greedy,)	5 Months



B) Web Development

Course	Topics	Duration
Basic Web Development	<ul style="list-style-type: none"> • HTML, css fundamentals • Introduction to responsive design • Building static web pages 	2 Months
Advanced Frontend Development	<ul style="list-style-type: none"> • JavaScript fundamentals • DOM manipulation • Asynchronous programming (Promises, async/await) 	4 Months
React Development	<ul style="list-style-type: none"> • Introduction to React framework • JSX syntax and components • State management with Redux 	2 Months
MERN Stack Development	<ul style="list-style-type: none"> • MongoDB fundamentals • Express.js basics • Node.js backend development • Integration with React frontend 	5 Months
Full Stack Development	<ul style="list-style-type: none"> • RESTful API design and implementation • Authentication and authorization • Deployment strategies and continuous integration 	8-9 Months



C) Mathematical Aptitude

Course	Topics	Duration
Numerical Analysis	<ul style="list-style-type: none">• Numerical methods for solving equations• Interpolation and approximation techniques• Numerical differentiation and integration	1 Months
Statistics	<ul style="list-style-type: none">• Descriptive statistics (mean, median, mode)• Probability theory• Inferential statistics (Chi Square Distribution, hypothesis testing)	3 Months



D) ML/AI

Course	Topics	Duration
Machine Learning Basics	<ul style="list-style-type: none"> • Introduction to machine learning • Linear regression, logistic regression • Model evaluation and validation techniques 	3 Months
Advanced Machine Learning	<ul style="list-style-type: none"> • Decision trees and ensemble methods • Support Vector Machines (SVM) • Neural networks and deep learning basics 	5 Months
AI Development	<ul style="list-style-type: none"> • Natural Language Processing (NLP) basics • Computer Vision fundamentals • 	5 Months
Machine Learning with R	<ul style="list-style-type: none"> • R programming language basics • Data manipulation with tidyverse • Statistical modeling and machine learning packages 	3 Months
Machine Learning with Python	<ul style="list-style-type: none"> • Python libraries for data analysis (NumPy, Pandas) • Scikit-learn for machine learning • Deep learning frameworks (TensorFlow, PyTorch) 	5 Months



E) Design

Course	Topics	Duration
Graphic Design	<ul style="list-style-type: none">• Design principles and elements• Adobe Illustrator basics	2 Months
UI/UX Design	<ul style="list-style-type: none">• User interface design fundamentals• Usability principles• Prototyping tools (Adobe XD, Sketch)	2 Months
3D Modeling and Animation (using Blender)	<ul style="list-style-type: none">• Introduction to Blender interface• Modeling techniques• Animation principles	3 Months



F) Self Enhancement Zone

Course	Topics	Duration
Discord Management and Bot Management	<ul style="list-style-type: none"> • Setting up and managing Discord servers • Bot creation and customization 	2 Months
Operating Systems	<ul style="list-style-type: none"> • Fundamentals of operating systems • Linux basics and command-line interface • Bash 	4 Months
GitHub & GitLab	<ul style="list-style-type: none"> • Version control with Git • Collaborative software development workflows 	2 Months
Canva	<ul style="list-style-type: none"> • Designing with Canva • Creating visual content for social media 	1 Months
Advanced Power-Point Techniques	<ul style="list-style-type: none"> • Presentation design principles • Animation and multimedia integration 	2 Months
Photoshop	<ul style="list-style-type: none"> • Image editing fundamentals • Advanced photo manipulation techniques 	2 Months
Lightroom	<ul style="list-style-type: none"> • Digital photo management • Basic editing and enhancement techniques 	1 Months



Service Department

A) Academics and Certification

Course	Topics	Price
Mock and Rock (Mock Exams)	<ul style="list-style-type: none"> • Mock exam preparation sessions • Test-taking strategies and tips 	300/- - 800/-
Project Documenta- tion	<ul style="list-style-type: none"> • Writing project proposals and reports • Documentation standards and templates 	500/- - 1000/-
Thesis Documenta- tion	<ul style="list-style-type: none"> • Thesis structure and formatting guidelines • Research methodology and literature review 	1500/- - 2000/-



B) Public Commercial

Course	Topics	Duration
Custom Laptop Home Screen Design	<ul style="list-style-type: none"> • Customizing desktop environments (Windows, Mac) • Creating themes and visual styles 	2000/-
Personal Portfolio Design	<ul style="list-style-type: none"> • Building an online portfolio • Showcase of projects and achievements 	30k - 50k
Commercial Website Design	<ul style="list-style-type: none"> • E-commerce website development • User experience optimization 	60k - 1L
Poster and Related Design	<ul style="list-style-type: none"> • Poster design principles • Marketing and promotional materials 	500/- - 1000/-
Album Design	<ul style="list-style-type: none"> • Album cover design • Layout and typography considerations 	2000/- - 5000/-



4 Academy Model

Subscriptions per month

Plan Name	Price	Features
PLATINUM	₹229	<ul style="list-style-type: none">✓ 55+ recordings✓ 1 Interview Prep✓ 1+1 live class/ mo✓ Exclusive Notes✓ 10% discount on add-ons
FREE	₹0	<ul style="list-style-type: none">✓ 35+ recordings✗ Interview Preps✗ Live Classes✗ Exclusive Notes✗ discount on add-ons
ASCENDANT	₹339	<ul style="list-style-type: none">✓ 85+ recordings✓ 1 Interview Prep✓ 2+1 live class / mo✓ Exclusive Notes✓ 20% discount on add-ons
RADIANT	₹449	<ul style="list-style-type: none">✓ 100+ recordings✓ 2 Interview Preps✓ 4+1 Live class/ mo✓ Exclusive Notes✓ 30% discount on add-ons



Hereby the general prospectus of **CODR Academy** gets ended. Further implementations will be notified and updated as well.

Date: 27/06/24

Signature: Sankha Saha , Debojyoti Bhuinya

