

FULL STACK DEVELOPMENT WITH AI

6-Month Course



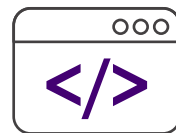
► Industry Expert Faculty

► AI-Enabled Curriculum

► Live Online Sessions



TABLE OF CONTENTS



● A Message From The Chairperson	03
● IITPSA Accreditation A Milestone For Excellence	04
● About the Course	05
● Course Benefits	06
● Who Is This Course For?	07
● Curriculum Structure	08
● Curriculum Overview	09
● On Completion of the Course, Participants Can	14
● Key Highlights	15
● Career Opportunities	16
● Tools Covered	17
● Sample Certificate	19
● Course Fee	19
● Our Global Network	20
● Contact Us	20



A Message From The Chairperson

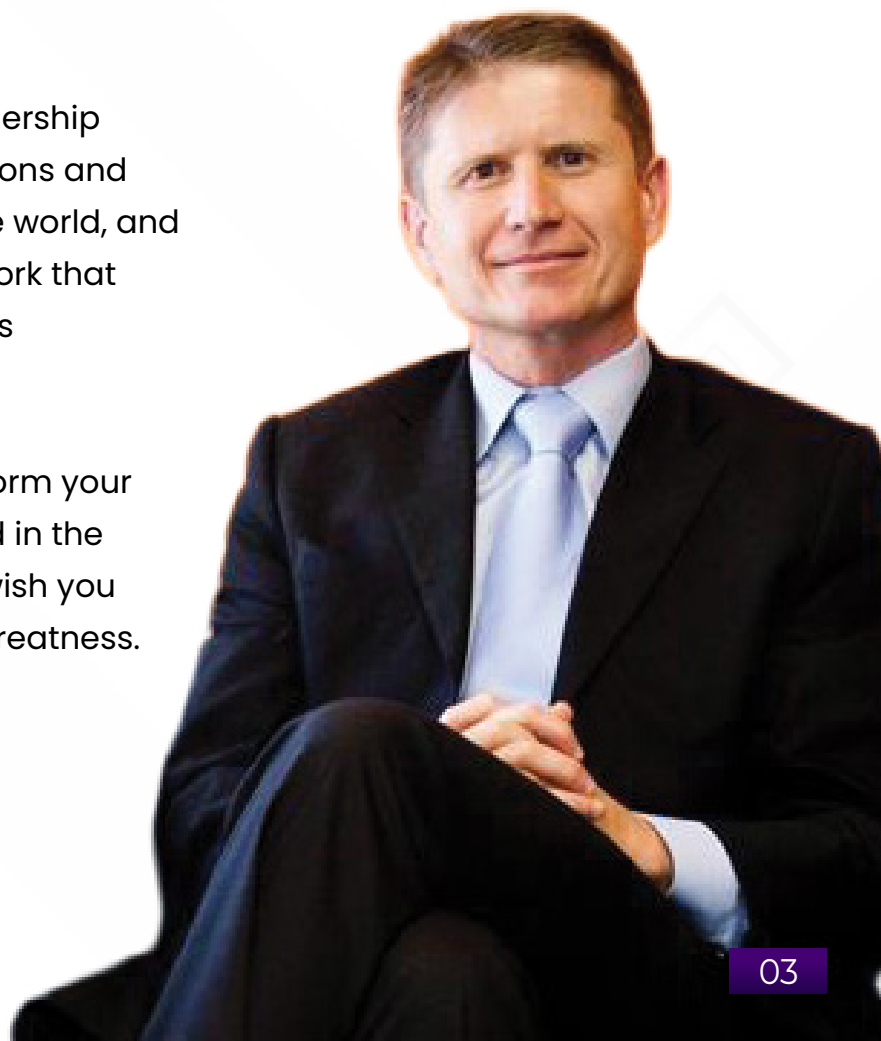
I am delighted to welcome you to Digital Regenesys, part of the Regenesys Group. The purpose of Regenesys is to help individuals awaken their potential and achieve their dreams. New technologies, social media, and innovation have sparked a digital revolution that is rapidly changing the world. The digital revolution demands a new breed of professionals to succeed in the new digital world. To give you a competitive advantage, we have developed cutting-edge digital programmes in the areas of information technology and management. Our programmes are facilitated by leading experts, entrepreneurs, and academics from top local and international institutions.

Regenesys is a global education institute with a presence in South Africa, India, Nigeria, Kenya, Tanzania, Croatia, Botswana, Mauritius, Zambia, Zimbabwe & Uganda, delivering cutting-edge online and contact learning programmes. Over the past 25 years, Regenesys has educated more than 500,000 students from 180+ countries and delivered corporate education programmes to 1000 reputable local and multinational companies. The majority of them are large multinationals such as Mercedes-Benz, Microsoft, Coca-Cola, Barclays, and Samsung, to name a few.

Regenesys alumni occupy top leadership positions in multinational corporations and government institutions all over the world, and form a very influential alumni network that supports its members with business opportunities across the world.

Get inspired, energised, and transform your career with programmes grounded in the realities of the new digital world. I wish you success on your journey towards greatness.

– Dr Marko Saravanja
Founder & Chairperson,
Regenesys Education



IITPSA Accreditation: A Milestone For Excellence

Regenesys Education is accredited by the Institute of Information Technology Professionals South Africa (IITPSA).

Established in 1957, IITPSA is South Africa's leading professional body committed to growth of ICT Professionals and ensuring IT courses are high-quality, job-ready, and meet industry standards.

Why Is IITPSA Accreditation Important?

IITPSA accreditation is a hallmark of quality, affirming that Regenesys Education meets the highest standards in curriculum design, faculty expertise, and industry alignment.

It ensures our courses are recognised locally and internationally, providing our students with a competitive edge in the job market.



What are CPD Points?

CPD, or "Continuous Professional Development" refers to structured learning activities aimed at improving professional knowledge, skills, and competencies.

Purpose:

- To ensure professionals stay updated with the latest trends, tools, and best practices in their field.
- To maintain and enhance professional standards and career development.

Gain 30 CPD Points through our IITPSA-accredited Full Stack Development with AI Course, supporting skill development and professional growth with global recognition.

About the Course

Software development is at the core of today's digital economy, powering everything from mobile applications to enterprise systems. As organisations continue to digitise, there is a rising demand for developers who can build full-stack applications while using AI tools to design smarter interfaces, improve backend logic, and deliver more intelligent digital solutions.

The Full Stack Development with AI Course by Digital Regenesys is a 6-month, multi-level course designed to equip learners with end-to-end development skills using AI tools. The course is structured across three levels – Introductory, Intermediate, and Advanced – covering core programming concepts before progressing to AI-assisted frontend design, intelligent backend development, and real-world AI-driven projects.

Through expert-led sessions and project-based learning, participants build strong foundations in frontend and backend development, covering HTML, CSS, JavaScript, React, APIs, databases, and deployment. The course blends practical coding with AI-supported learning to help learners design responsive interfaces, develop secure backend systems, and deliver full-stack applications ready for real-world use.



Course Benefits



Learn end-to-end full-stack development, covering frontend, backend, databases, APIs, and cloud deployment.

Use AI tools like ChatGPT and Gemini to support UI design, code logic, debugging, and API development.



Build real-world projects at every level, including a React portfolio, blog API, and an AI-powered chatbot.

Develop strong fundamentals in HTML, CSS, JavaScript, React, Node.js, Express, and MongoDB.



Gain practical experience with secure authentication, role-based access, and scalable system design.

Build a job-ready portfolio that reflects modern, AI-driven software development practices.



Who Is This Course For ?

College Students (CS/IT): *Practical skills, projects for resumes, and a job-ready portfolio.*

Career Switchers: *Foundational and practical knowledge, portfolio building, and job preparation.*

Self-Taught Developers: *A guided learning path, mentorship, real projects, and deployment skills.*

Recent Graduates: *Real-world project experience, GitHub proof of work, and interview preparation.*

Freelancers & Entrepreneurs: *End-to-end app development skills, deployment experience, and full-stack expertise.*

Bootcamp Graduates: *Deeper project work, real-world application, and confidence in implementation.*

Underrepresented Tech Talent: *Access to practical, industry-aligned training with a portfolio-first approach.*

High School Graduates: *A strong head start in web development with project-based learning.*

Curriculum Structure

Introductory Level

2 Months	Total Sessions : 16
-----------------	----------------------------

Introduction to Web Development, HTML Basics, CSS Fundamentals, Flexbox & Grid, Media Queries & Responsive Design, CSS Best Practices, Intro to JavaScript, JS Control Structures, DOM Manipulation, Event Handling, Forms & Validation, Introduction to Git & GitHub Project: Personal Portfolio Website, Portfolio Build Continued, Deploy Portfolio, Review + Live Demo

Intermediate Level

2 Months	Total Sessions : 16
-----------------	----------------------------

Intro to Backend & Node.js, Setting up Express.js, REST API Basics, Middleware & Routing, Intro to MongoDB, Mongoose & Schema Design, CRUD Operations, Authentication: Part 1, Authentication: Part 2, File Uploads, Error Handling, Environment & Config, Project: Blog API, Testing API, Deploy Backend, Review + Live Demo

Advanced Level

2 Months	Total Sessions : 16
-----------------	----------------------------

Full Stack Architecture, Connecting React + API, Authentication Flow, Protected Routes, State Management, Advanced Forms & Validation, Role-Based Access Control, File Upload Integration, Real-Time Features (Intro), Project Setup: Full Stack App, Building Features (Frontend), Building Features (Backend), Testing (Frontend & Backend), Deployment (Full Stack), Finalising Project, Demo Day + Feedback

Curriculum Overview

Full Stack Development with AI - Introductory Level

01

Introduction to Web Development

Duration : 2 Hrs

Overview of full stack, tools, workflow

02

HTML Basics

Duration : 2 Hrs

Structure, tags, forms, semantic HTML

03

CSS Fundamentals

Duration : 2 Hrs

Box model, selectors, fonts, spacing

04

Layout Systems

Duration : 2 Hrs

Flexbox & Grid

05

Responsive Design

Duration : 2 Hrs

Media queries, mobile-first approach

06

CSS Best Practices

Duration : 2 Hrs

BEM naming, component-based styling

07

JavaScript Fundamentals I

Duration : 2 Hrs

Variables, data types, functions

08

JavaScript Fundamentals II

Duration : 2 Hrs

Loops, arrays, objects, conditionals

09

DOM Manipulation

Duration : 2 Hrs

Selecting and modifying elements

10

Git & GitHub

Duration : 2 Hrs

Version control, commits, repos

11 **Introduction to React**
Duration : 2 Hrs
What are React, JSX, and components

12 **React State & Props**
Duration : 2 Hrs
Passing data to the use State hook

13 **React Events & Conditional Render**
Duration : 2 Hrs
Handling input, basic interactivity

14 **Project Build: React Portfolio**
Duration : 2 Hrs
Build a personal portfolio using React

15 **Deployment**
Duration : 2 Hrs
Deploy with Vercel or Netlify

16 **Final Review & Demo**
Duration : 2 Hrs
Present projects, feedback, Q&A

Full Stack Development with AI - Intermediate Level

01 **Backend Basics**
Duration : 2 Hrs
Node.js, npm, server setup

02 **Express.js Setup**
Duration : 2 Hrs
Routes, Express structure

03 **REST API Basics**
Duration : 2 Hrs
GET, POST, PUT, DELETE

04 **Routing & Middleware**
Duration : 2 Hrs
Params, query, middleware

05

MongoDB Introduction

Duration : 2 Hrs

NoSQL concepts, Atlas setup

06

Mongoose & Models

Duration : 2 Hrs

Schema, validation

07

CRUD Operations

Duration : 2 Hrs

Full data handling

08

Authentication I

Duration : 2 Hrs

Hashing, signup/login

09

Authentication II

Duration : 2 Hrs

JWT, session handling

10

File Uploads

Duration : 2 Hrs

Multer, file system basics

11

Error Handling

Duration : 2 Hrs

Global error middleware

12

Environment & Config

Duration : 2 Hrs

.env, configs, security tips

13

Project Build I

Duration : 2 Hrs

Build blog API

14

Testing APIs

Duration : 2 Hrs

Postman, Supertest basics

15

Deployment

Duration : 2 Hrs

Render/Railway setup

16

Demo + Review

Duration : 2 Hrs

Project showcase & recap

Full Stack Development with AI - Advanced Level

01

Full Stack Overview

Duration : 2 Hrs

Architecture & tech flow

02

Frontend-Backend Connection

Duration : 2 Hrs

Axios, fetch, APIs in React

03

Authentication Flow

Duration : 2 Hrs

Token handling, localStorage

04

Protected Routes

Duration : 2 Hrs

React Router + auth logic

05

State Management

Duration : 2 Hrs

Context API or Redux Toolkit

06

Advanced Forms

Duration : 2 Hrs

React Hook Form + Yup

07

Role-Based Access Control

Duration : 2 Hrs

Admin/user dashboard setup

08

File Upload Integration

Duration : 2 Hrs

Images/files in full stack apps

09

Real-Time Features (Optional)

Duration : 2 Hrs

WebSockets, live data basics

10

Project Planning

Duration : 2 Hrs

Choose and design capstone app

10

Project Build I (Frontend)

Duration : 2 Hrs

UI development & components

12

Project Build II (Backend)

Duration : 2 Hrs

API routes, DB models

13

Testing Full Stack App

Duration : 2 Hrs

Unit tests (React & Express)

14

Deployment Full Stack App

Duration : 2 Hrs

Frontend (Vercel), Backend (Render)

15

Final Touches

Duration : 2 Hrs

Docs, UI polish, README

16

Final Demo + Review

Duration : 2 Hrs

Present full project, job tips



On Completion of the Course, Participants Can

01

Design and build full-stack applications by applying core principles of front-end and back-end development across real-world scenarios, supported by AI tools for layout planning and system design.

02

Create responsive, user-friendly interfaces using semantic HTML, CSS (Flexbox, Grid), media queries, and component-based styling practices, while using AI to generate colour palettes, layout ideas, and improve UX flows.

03

Write efficient and scalable code in JavaScript, handling variables, functions, loops, arrays, objects, and conditionals for dynamic interactivity, with AI support for concept clarity and debugging.

04

Develop and manage APIs and servers with Node.js and Express, implementing routes, middleware, and CRUD operations, while integrating AI models (such as Gemini) to enhance API responses.

05

Work with databases effectively by applying NoSQL concepts, schema design, validation, and data handling using tools like MongoDB Atlas, within AI-assisted backend architectures.

06

Implement secure authentication and authorisation using hashing, JWT, sessions, and environment-based configurations, while considering AI security, prompt handling, and responsible data usage.

07

Build and test production-ready applications with tools like React, Redux/Context API, React Hook Form, Yup, Postman, and Supertest, including the development of intelligent full-stack features such as AI-powered chatbots.

08

Deploy and showcase projects using platforms such as Vercel, Netlify, and Render, supported by proper documentation, UI polish, and presentation of AI-driven, end-to-end applications.



Key Highlights



Every concept is reinforced through real-world projects, ensuring practical application and industry relevance.



Learners build and deploy full-stack applications to showcase on GitHub, resumes, and in interviews.



Projects are deployed on platforms like Vercel, Netlify, and, simulating real product launches.



The course covers frontend, backend, databases, and integration for a complete developer skill set.



Resume building, LinkedIn optimisation, mock interviews, and job preparation strategies are included.



A final capstone project mimics a real-world SaaS application with authentication, dashboards, and user flows.

Career Opportunities

01

Web Developer

02

DevOps Engineer

03

Software Engineer

04

Data Engineer

05

Cloud Engineer

06

Game Developer

07

Full Stack Developer

08

Back-end Developer/
Front-end Developer



Tools Covered in This Course (All Levels)



VS Code



Git



GitHub



Postman



Chrome DevTools



Figma

Frontend Tools (FSD - Introductory)



HTML5



CSS3



JavaScript (ES6+)



React



React Router



React Hook Form



Yup



Tailwind CSS
(or regular CSS)



Netlify / Vercel

Backend Tools (FSD: Intermediate)



Node.js



Express.js



MongoDB



MongoDB Atlas



Mongoose



bcrypt.js



jsonwebtoken (JWT)



Multer



dotenv



Railway

Render / Railway

Full Stack Tools (FSD: Advanced)

- ◆ *MERN Stack*
- ◆ *Axios*
- ◆ *Context API / Redux Toolkit*
- ◆ *Jest / Supertest (optional)*
- ◆ *GitHub Actions (optional)*
- ◆ *WebSocket / Socket.io (optional)*
- ◆ *Vercel (Frontend) + Render (Backend)*

AI- Integrated Tools



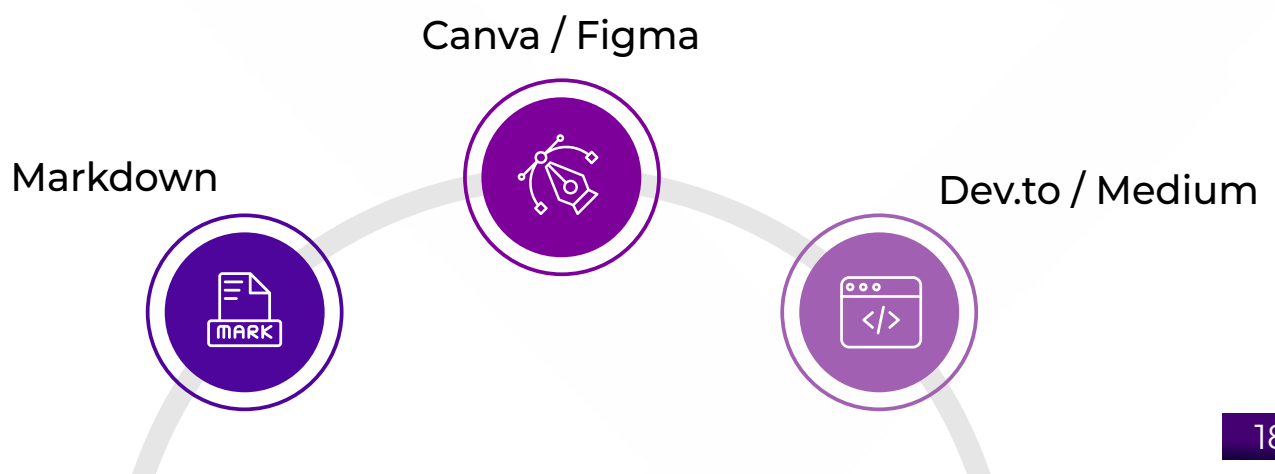
ChatGPT



*AI Color Palette
Tools*

UI Assist Tools

Optional / Bonus Tools (for Capstone Projects or Career Prep)



Sample Certificate



Course Fee

India	South Africa	Nigeria	USA	Kenya	Uganda
₹170,000	R34,000	₦1,841,700	\$1,897	Ksh229,840	UGX4,427,100

Tanzania	Botswana	Namibia	Zimbabwe	Zambia	Mauritius
TSh3,554,500	P30,088	\$30,600	ZWG46,364	ZMW42,270	MURs94,972

Our Global Network

We Have Students Thriving in Over 180 countries, Supported By Our Offices In Eleven Key Locations Worldwide!



Contact Us

South Africa:

165 west Street, Sandton, Johannesburg
South Africa, 2031

Kenya:

1203, 12th Floor, GTC Office Tower
Intersection of Waiyaki Way, Chiromo

Tanzania:

2nd Floor, Ocean Residence Building, Plot
418, Toure Drive, Masaki, Dar Es Salaam,

Botswana:

9W24+J7P, iTowers North, CBD, Gaborone,
Botswana

Zimbabwe:

Eight2Five, Fourth Floor, Three Anchor House,
Jason Moyo Avenue, CBD, Harare, Zimbabwe

Nigeria:

8th Floor, Churchgate Tower 2 PC 31
Victoria Island, Nigeria

India:

Proxima Building, Unit 1101 11th Floor, Plot 19,
Sector 30 A, Vashi, Navi Mumbai, India, 400705

Uganda:

2nd Floor, Wing A Mirembe Business Center
Plot 46, Lugogo Bypass, Kampala P.O. Box 75391

Zambia:

Sunshare Towers, Plot 15585, Olympia, 1
Katima Mulilo Rd, Lusaka 10101, Zambia

Mauritius:

SF201 E, The Factory Building, Vivea
Business Park, Moka, Mauritius