ASEERIUM
Institute for Information Technologies

Post Graduate Program in
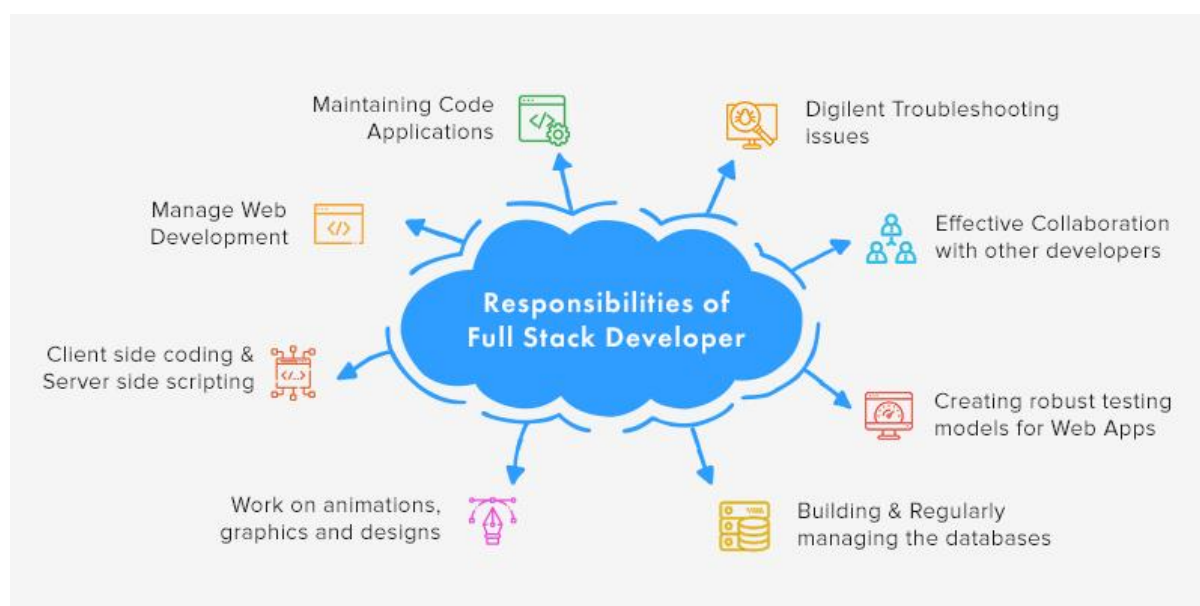
Full Stack Mobile and Web Development with DevOps

ABOUT PGP in FULL STACK WEB & MOBILE DEVELOPMENT WITH DEVOPS

What Is Full Stack Development?

Full-stack development refers to development of both front-end, back-end and databases for web applications and websites. **Frontend** is the visible part of website or web application which is responsible for user experience. The user directly interacts with the frontend portion of the web application or website. HTML, CSS, Bootstrap, JQuery, JavaScript, Angular and React are few examples of frontend languages, libraries frameworks. **Backend** refers to the server-side development of web application or website with a primary focus on how the website works. It is responsible for managing the database through queries and APIs by client-side commands. The backends are built by using PHP, C++, Java, Python, Node.js, etc... **Database** is the collection of inter-related data which helps in efficient retrieval, insertion and deletion of data from database and organizes the data in the form of tables, views, schemas, reports etc. Few examples for database are MySQL, PostgreSQL, Oracle and MongoDB.

Popular Stacks:

- MEAN Stack: MongoDB, Express, Angular and Node.js
- MERN Stack: MongoDB, Express, ReactJS and Node.js
- Django Stack: Django, Python and MySQL as Database
- Rails or Ruby on Rails: Uses Ruby, PHP and MySQL
- LAMP Stack: Linux, Apache, MySQL and PHP

According to the research, there is a 20% growth in demand for Full-stack developer compared to the last couple of years.

Why so much demand for Full Stack Developers in the industry?

Who can learn these skills?

- Fresher graduates who wants to become a full stack developer
- Graduates who wants to design and develop web applications
- Graduates who wants to design and develop mobile applications
- Graduates who are working in other field/ industry and wants to move to software industry
- Software engineers who are working in other field and wants to move to software industry
- Graphic designers/ web designers who wants to develop web and mobile applications
- Graduates working in irrelevant industry and wants to move to software industry

It doesn't matter if you have programming skills or not, we will make sure you learn from basics to advanced programming concepts in interesting way.

This **PG program in Full Stack Web & Mobile Development with DevOps** has been designed to help you master all elements of Web and Mobile Application development regardless of your background. The in-depth curriculum starts from absolute basics of the subject matter and builds competencies in each through rigorous, hands on assignments and projects done under the guidance of subject matter experts.

PG program in Full Stack Web & Mobile Development with DevOps is a 6-month classroom program designed to develop competencies in front-end design using HTML5, CSS3, JavaScript, Bootstrap, JQuery and Angular (or) React; backend development using ExpressJS, NodeJS and Ionic (or) ReactNative; database management using ProgreSQL, MongoDB and DynamoDB; DevOps using NPM, Git, GitHub, Jenkins, JIRA, Docker, Docker Compose, and Kubernetes; EC2, S3, RDS and Elastic BeanStalk AWS cloud components; and many other tools and techniques to make you a complete Full Stack Developer.

PROGRAM BENEFITS

1.Industry Relevant Curriculum

This Full Stack training program is uniquely designed by industry leaders and Full Stack experts and primary objective of having 100% employability for our students. The program builds a solid foundation by covering the most popular, widely used and in-trend tools and techniques in Web and Mobile development industry.

2. Corporate Partners

The program is designed, delivered and endorsed by Full Stack experts and consulting organizations. Our partners are involved in curriculum design, facilitating projects, industry lectures and also suggesting pedagogical improvements.

3. Hands on Exposure

The curriculum combines academic elegance and business relevance to facilitate the participants learn web designing, web applications development, mobile applications development, database design and management techniques, DevOps implementation, etc… with practice-oriented approach by developing various web/mobile applications and frameworks using different tools and techniques.

ASEERIUM ADVANTAGES

1.Aseerium Scholar

Aseerium provides an innovative learning environment, called Aseerium Scholar, that encourages collaborative approach between the students and trainers, thus paving the way for maximizing learning effectiveness. Aseerium student activities will be entirely tracked through Aseerium Scholar app, which is both mobile cum web app. This app will enable our students and trainers to view the syllabus and course progress; assign and submit assignments/ projects; conduct assessments and quizzes; view study materials and feedbacks, etc...

2. Capstone Project

All candidates would be pursuing an application-oriented capstone project in developing a complete end-to-end Full Stack Web & Mobile application development project with Frontend development, backend development, database design, unit testing of the application and DevOps implementation with cloud deployment. The project shall be mentored and evaluated by faculty from Aseerium or by industry experts. The project will be presented to the faculty board as part of the requirement for successful completion of the program.

3.Industry Perspective Lectures

This is an important component of the program that complements and substantiates the learning with an applied orientation. The participants get the opportunity to listen to eminent speakers from Full Stack experts working for leading companies and assimilate the best practices discussed by them in their lectures.

4. Experiential Learning

This program is designed to transform candidates to industry-ready full stack development professionals through hands-on experiential learning on relevant tools. This is achieved through practice exercises, hackathons, quizzes and assignments on concepts of web technologies, techniques, tools, frameworks, etc...

WHY CHOOSE THIS PROGRAM?

Java Script is voted the most preferred language for recent years. There is a massive demand for Full Stack Developers across the world. Full-stack development is trending due to the efficiency and features of Node.js, Angular, React, Express.js and other popular frameworks and libraries. According to the research, there is a 20% growth in demand for Full-stack developer compared to the last couple of years.

This PG Program makes the students develop advanced skills in both web and mobile applications development. Most importantly the students will learn and implement Agile and DevOps processes with NPM, Git, GitHub, JIRA, Jenkins and Kubernetes. The students will also be learning and creating Docker containers and deploying their projects in AWS cloud. This entire practice cum project-oriented program will make them skilled above par with what the companies looking for.

If you're wondering, if we are the right choice to help you upskill, we understand that career decisions need to be carefully considered and this question is natural. Here's why we think we would be a good fit:

- The program is delivered in classroom format on weekdays (Monday to Friday). The program will span over 6 months including projects and internships.
- The in-depth and industry relevant course curriculum is designed by leading academicians experienced industry practitioners.
- You'll learn by doing projects, assignments and quizzes that give you an edge over others in application-oriented and industry-relevant test automation skills.
- Mentoring sessions with industry veterans help you learn best practices and how to apply test automation techniques and principles to solve business problems.

All these factors help to upskill in Selenium automation and build a career in the field.

Our Teachers and Mentors

The role of a teacher in shaping our talents and helping us realize our true potential cannot be underestimated. A good teacher is like a light house, guiding us through all the challenges and helping us reach our destiny.

Through our mentored learning model Aseerium's mentors and Gurus help fresh engineers and working professionals to power ahead in their career and set themselves up for success in the rapidly evolving business environments. So far, our faculty has had the chance to impact 500+ learners and help them transition to a better career.

Module I – Frontend Development

Introduction to HTML

- Components of Website
- What is HTML?
- HTML File Structure
- Heading Tags
- Paragraph Tags
- Line break
- Formatting Texts
- Lists
- Attributes
- Comments

Advanced HTML

- Tables
- Forms
- Form Elements
- Links
- Entities
- Iframe
- Meta

Introduction to CSS

- What is CSS?
- CSS Types
- Selectors
- Specificity
- Inheritance
- Colors
- Margin
- Padding
- Border

Intermediate CSS

- Display
- Box Model
- Text Align
- Text Transform
- Text Decoration
- Border Radius
- Fonts
- Pseudo classes and elements
- Shadows
- Backgrounds
- Gradients
- Position
- Units

Advanced CSS

- Responsive Design
- Media Query
- Transform
- Transitions
- Icons
- Flex Box
- Animations

JavaScript Basics

- What is JavaScript?
- Variables
- Data Types
- Operators
- Array
- Loops
- Decisions
- Functions
- Parameters

Advanced JavaScript

- Function Expression
- Callbacks
- String Functions
- Number Functions
- Array Functions
- Date
- Math
- Random
- use strict
- Objects

- JSON
- XHR
- Fetch
- Regular Expression (RegEx)
- Error Handling

DOM Manipulation

- What is DOM?
- Document
- Window
- Find Element
- Change Content
- Event Listeners
- Change Styles

Introduction to Bootstrap

- What is Bootstrap?
- Colors
- Buttons
- Typography
- Text Align
- Text Transform
- Container
- List
- Margin
- Padding
- Display
- Alerts
- Forms

Advanced Bootstrap

- Grid
- Container
- Nav
- Navbar
- Modal
- Scroll Spy
- Carousel

jQuery

- What is jQuery?
- Find Element
- Change Content
- Event Listeners
- Change Styles

ES6

- What is ES6?
- let and const
- Arrow Functions
- Spread and Rest
- Destructuring
- Template Strings
- Class
- Map and Set
- Modules
- Error Handling
- Promise
- Async and await

TypeScript

- What is TypeScript?
- Types
- Interfaces
- Functions
- Interfaces
- Classes
- Enums
- Generics
- Access Modifiers
- get and set
- constructor
- import and export

Angular Basics*

- What is Angular?
- Components
- Property Binding
- Event Binding
- Debugging
- Component Interactions
- View Child
- Content Child
- Lifecycle Hooks
- Directives
- Pipes
- Services

Intermediate Angular*

- Template Driven Forms
- Reactive Forms
- Form Array
- Custom Validation

- Async Validation
- Routing
- Child Routes
- Lazy Loading
- Route Guards

Advanced Angular*

- Observable
- rxjs operators
- Http Client
- Communicating with backend services
- Http Error Handling
- Http Interceptor
- Global Error Handling
- State Management
- Environment variables
- Unit Testing
- Building Angular Application
- Deploying

React Basics**

- What is React?
- JSX
- Components
- Props
- Class based vs Functional Components
- State
- Stateful vs Stateless Components
- Lifecyle Hooks
- CSS Modules
- Prop Types
- Debugging
- Styled Components
- Media Queries

Intermediate React**

- Form Validation
- React Form
- React Router DOM
- Routing
- React Scroll
- Route Protection
- Lazy Loading

Advanced React**

- What is Redux?

- State Management
- Redux Thunk
- Axios
- Communicating with backend services
- Http Error Handling
- Http Interceptor
- Global Error Handling
- Environment variables
- Unit Testing
- Building React Application
- Deploying

React Hooks**

- What is React Hooks?
- useState
- useEffect
- useCallback
- useRef
- useReducer
- useContext
- Custom Hook
- React Hook Form

Note: Students will be provided to choose either Angular (*) or React (**) for this program.

MODULE II – Backend Development

Angular Material*

- What is Angular Material?
- Colors
- Buttons
- Icon
- Card
- List
- Spinner
- Snackbar
- Datepicker
- Dialog
- Toolbar
- Table
- Theming

React Material UI**

- What is Material UI?
- Colors
- Buttons
- Icon
- Card
- List
- Spinner
- Snackbar
- Datepicker
- Dialog
- Toolbar
- Table
- Theming

Node.js Basics

- What is Node.js?
- What is npm?
- Modules

- Import and Export
- Core modules
- Third party modules
- Debugging
- Blocking vs Non-Blocking
- Reading and Writing data into Files

Advanced Node.js

- Callbacks
- Event loop
- Event Emitter
- Buffers
- Streams
- File Systems
- Global Objects
- Utility modules
- Unit Testing
- Create Web Server using http
- Http request and response
- Http methods
- Http Headers

Express

- What is Express?
- Routing
- Serving static files
- Middleware
- Router
- Params
- Body
- Express Validator
- Error Handling
- Custom Middleware

EJS

- What is Template Engine?
- What is EJS?
- Tags
- Includes
- Conditions
- Iterations
- Layouts

MVC

- What is MVC?
- Model

- View
- Controller
- Refractor Node.js Application

Security

- Sessions
- Cookies
- CSRF Protection
- Password Hashing
- Helmet
- Audit

Error Handling

- Runtime Error Handing
- Database Error Handling

File Upload

- What is multer?
- Upload single file
- Upload multiple files
- Download file
- Generate PDF file
- Serve Index

Nodemailer

- What is Nodemailer?
- Simple Email
- Html Email
- Attachments
- Sendgrid Transport

Introduction to REST APIs

- What is Web Services?
- What is REST APIs?
- Http Methods
- CORS
- CRUD Operation

Advanced REST APIs

- Server-side validation
- Express validator
- File upload
- Pagination

REST APIs Testing

- What is Postman?

- Testing APIs using Postman

REST APIs Security

- Authentication
- Password Hashing
- Security Layer
- JWT Security Layer
- Token Refreshing

REST APIs Error Handling

- Invalid Route Handling
- Global Error Handling
- Runtime Error Handling
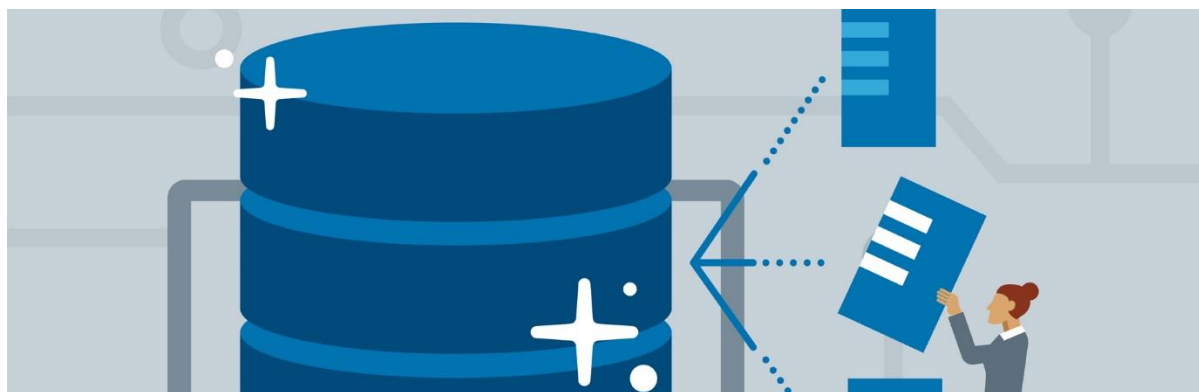- Database Error Handling
- http-errors

Websockets

- What is Websockets?
- What is socket.io?
- Opening Connections
- Send and Receiving Messages
- Closing Connections

GraphQL

- What is GraphQL?
- Architecture
- Application Components
- Type System
- Schema
- Resolver
- Query
- Mutation
- Validation

MODULE III – Databases

SQL and NoSQL

- What is SQL?
- What is NoSQL?
- SQL vs NoSQL

PostgreSQL

- What is PostgreSQL?
- Data Types
- Create Database
- Create Table
- Schema
- Insert Query
- Select Query
- Update Query
- Delete Query
- Where Clause
- Drop Table
- Drop Database

Sequelize

- What is Sequelize?
- Model
- Entities
- Querying
- Validations
- Associations
- Relationships
- Joins

MongoDB

- What is MongoDB?
- Data Modelling

- Create Database
- Create Collection
- Data Types
- Insert Document
- Query Document
- Update Document
- Delete Document
- Projection
- Limiting
- Sorting
- Drop Collection
- Drop Database

Mongoose

- What is Mongoose?
- Schemas
- Schema Types
- Connections
- Models
- Documents
- Queries
- Validation
- Operators
- Functions

MODULE IV – Mobile App Development

Ionic Basics*

- What is Ionic?
- Components
- Colors
- Buttons
- Text
- CSS Utilities
- Image
- Avatar
- Thumbnail
- Icons
- List
- Card
- Badge
- Virtual Scroll
- Toolbar
- Grid
- Styling and Theming

Intermediate Ionic*

- Inputs
- Checkbox
- Toggle
- Select
- Date Picker
- Chip
- Action Sheet
- Spinner
- Loading
- Popover
- Toast
- Alert
- Modal

- Slides
- Side Menu
- Bottom Menu
- Tabs
- Split Pane

Advanced Ionic*

- Native Device Features
- Pull to refresh
- SMS
- Call Number
- QR Scanner
- Local Notifications
- Push Notifications
- Taking Pictures using Camera
- Detect location using GPS
- Google Maps
- Google Login
- Facebook Login
- Building Ionic Application
- Deploying

Introduction to React Native**

- What is React Native?
- Components
- View
- Text
- Button
- StyleSheet
- Icons
- FlatList
- Debugging

Intermediate React Native**

- React Native Paper
- Inputs
- Buttons
- Checkbox
- Card
- Dialog
- Dimensions API
- Platform API
- React Navigation
- Stack Navigation
- Drawer Navigation
- Tab Navigation

Advanced React Native**

- Native Device Features
- Pull to refresh
- SMS
- Call Number
- QR Scanner
- Local Notifications
- Push Notifications
- Taking Pictures using Camera
- Detect location using GPS
- Google Maps
- Google Login
- Facebook Login
- Building React Native Applications
- Deploying

Note: Students will be provided to choose either Angular (*) or React (**) for this program.

MODULE V – Cloud Development & Deployment

Cloud Computing

- What is Cloud Computing?
- Cloud Deployment Models
- Cloud Service Models
- Management
- Data Storage
- Virtualization
- Security
- Operations
- Applications
- Providers

AWS

- What is AWS?
- EC2
- S3
- RDS
- Dynamo DB
- Elastic Beanstalk

Deploying in Cloud

- Preparing Node.js Application
- Creating MongoDB Cluster in Atlas
- Deploy to Heroku Cloud
- Deploy to AWS Elastic Beanstalk
- Deploy both Frontend and Backend into Cloud

Firebase

- What is Firebase?
- Cloud Firestore
- Listen for real-time updates
- Cloud Storage

- Authentication
- Hosting
- Cloud Functions
- Rules

Redis

- What is Redis?
- Commands
- Keys
- Strings
- Hashes
- Lists
- Sets

MODULE VI – DevOps with Jenkins, Docker & Kubernetes

DevOps

- What is DevOps?
- DevOps tools, phases and processes
- Agile
- JIRA

Docker Basics

- Docker Terminologies and Commands
- Pulling a Docker Image
- Creating A Docker Container
- Basic Linux Commands
- Docker Port Mapping
- Docker Volume Mapping
- Creating Docker Network & Multiple Containers
- Creating Docker Images
- Passing Environment Variables to Docker Container
- Tagging Images & Pushing to DockerHub

Docker Compose

- Docker Compose - Introduction
- Docker Compose - Multiple Containers with Multiple Option

Running Web Applications Inside Docker Container

- Creating Our Own Images for Our Web Application
- Creating Dockerfile With Dependencies
- Building Docker Images
- What is localhost in a container?
- Defining Entire Infrastructure Using Docker Compose File
- Docker Compose Execution

Jenkins In Continuous Integration

- Continuous Integration & Delivery Process - Introduction

- Installing Jenkins Using Docker
- Jenkins Volume Mapping Permissions
- Jenkins - Master & Slave
- Jenkins - Connecting to An Agent
- Adding DockerHub Credentials and Adding Jenkinsfile
- Creating GitHub Account
- Pushing Our Project into GitHub
- Creating Jenkins Job for Building Docker Image
- Docker Image in DockerHub
- Jenkins Content Security Policy Configuration
- Conducting Unit Test and Archiving Test Results

Kubernetes

- Kubernetes – Introduction
- Images
- Jobs
- Labels and Selectors
- Nodes and Services
- Pod
- Replica Sets
- Deployments

TOOLS AND LANGUAGES, YOU WILL LEARN

CAREER SUPPORT

Aseerium Accelerated Career programs

We conduct regular career programs to connect our students to industry opportunities.

Personal Career Coach

Get access to career mentoring depending upon your experience in the industry with a personal career coach. The coaches are from the software industry so the candidates benefit from their guidance on how to build a career into specific industry.

e-Portfolio & Resume Building Sessions

An e-portfolio is a snapshot of the all the projects done and skills acquired during the program that is shareable across social media channels. We also help you build your resume to highlight your test automation skill-set along with your previous professional experience, if any.

Aseerium Learning Job Board

The program provides candidates access to the Aseerium Job Board. Many organizations approach us with job opportunities monthly which are shared through the job board with our students. Our candidates get an average salary hike of 40% on a successful transition.

OUR STUDENTS ARE WORKING IN

and many more companies

ADMISSION DETAILS

Eligibility

- Bachelor's Degree in any discipline with a minimum of 50% aggregate marks in graduation or equivalent
- For applicants with exceptional qualification and/or industry experience, a relaxation in the minimum eligibility criteria may be considered

Program Format	Classroom
Program fees	INR: 60,000/-
Fees inclusions	Learning material, tuition fee and Aseerium Scholar access

CONTACT US

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