

Full Stack Software Development – Student's Manual

This Student's Manual has details of the program policy and student learning experience. You are expected to go through this manual thoroughly and abide by the policies mentioned here. Abiding by these policies will ensure the smooth conduct of the program.

In case you have any questions, please reach out to your upGrad Buddy immediately.

Program Structure

The Program is divided into 4 main milestones (Fundamental, Web Design & Front End Development, Back End Development, and System Design & Algorithms).

Module	Weeks	Synopsis	Topics
Fundamentals (3 weeks)	1 - 3	This module helps you take your first steps towards becoming a successful coder. You will be introduced to computer programming as you learn about programming languages, how computer programs work, and how to build programming logic using Pseudocode.	i. Introduction to Programming
			ii. Syntax and Pseudocode
			iii. Introduction to Fullstack Development
			iv. Linux Essentials
Web Development (7 weeks)	4 - 10	The frontend represents the user-facing application, which aims to provide a stellar user experience. This module will begin with an introduction to source code management using Git and GitHub. HTML5 and CSS3 will help you build user interfaces and web pages.	i. Source & Version Control using Git & GitHub
			ii. Mastering HTML5 & CSS3
			iii. Mastering JavaScript (ECMAScript 2020+)
			iv. Work with Remote Data & writing modular code
			v. Modern JavaScript using Babel
			vi. Work with Parcel & Webpack module bundlers
Frontend Development (3 weeks)	11 - 13	To build such user-facing applications, you will learn React, an immensely popular JavaScript library by Meta and loved by some of the biggest product companies worldwide.	i. Building Single Page Applications using React.
			ii. Work with the incredible Hooks API.
			iii. Work with React Router to implement routing in a single-page application.
			iv. Learn to manage state globally using Redux.
Backend Development (4 weeks)	14 - 17	Discover Node.js, the incredibly popular JavaScript runtime that enables you to build everything from command-line tools to web servers and APIs. You will then work with Express, a popular framework that simplifies building Node.js applications. Work with the MongoDB database engine to learn about operations, data aggregation pipelines, and more.	i. Learning Node.JS
			ii. Mastering the Express framework
			iii. Learning MongoDB
Testing & Deployment (2 weeks)	18 - 19	Go deeper into RESTful API design as you learn more about the OpenAPI Spec and the use of Swagger for API documentation. Learn about software testing which enables you to write code that tests and validates your application code to ensure it behaves as expected under various scenarios. Learn to deploy your Fullstack applications on the cloud with major providers.	i. Designing & Building RESTful APIs
			ii. Test-Driven Development using Jest, Puppeteer & Cypress.io
			iii. Deploying the app on the cloud
System Design & Algorithms (8 weeks)	20 - 27	The art of system design involves defining the architecture, moving parts, and interfaces for a product and is a critical skill, especially during SDE interviews. This module would help you master this art and be prepared to face interviews with confidence.	i. Mastering System Design

		In this final module, you will learn about data structures and algorithms. Data structures represent mechanisms for storing and processing data in computer programming. Algorithms that are needed to efficiently solve critical programming challenges and problems, not only in day-to-day life but also during job interviews. You also get access to self-paced content on the Agile and SCRUM process management frameworks to ensure you're comfortable working in a professional environment.	ii. Master the intricacies of Arrays, Objects, Stacks, Queues, Linked Lists, Hash Tables, Graphs, Trees and more data structures.
			iii. Algorithms using JavaScript
			v. Agile & Scrum for Developers (Self-Paced)

The program will be delivered through a series of Training Sessions spanning over a duration of ~27 weeks.

Phase/Milestone	Week(s)	Day	Session Type	Duration	Timings
Pre-Program / Fundamentals	1	Wednesday	Orientation Session	1 Hr	19:30-20:30 (Asia/Kolkata)
		Saturday	Training Session	3 Hrs	14:00-17:00 (Asia/Kolkata)
	2	Saturday	Training Session	4 Hrs	14:00-18:00 (Asia/Kolkata)
	3	Saturday	Training Session	2.15 Hrs	14:00-16:15 (Asia/Kolkata)
		Sunday	Training Session	2.25 Hrs	14:00-16:25 (Asia/Kolkata)
Web Design & Development	4 to 10	Saturday	Training Session	4 Hrs	14:00-18:00 (Asia/Kolkata)
		Sunday	Training Session	4 Hrs	14:00-18:00 (Asia/Kolkata)
Frontend Development	11 to 13	Saturday	Training Session	4 Hrs	14:00-18:00 (Asia/Kolkata)
		Sunday	Training Session	4 Hrs	14:00-18:00 (Asia/Kolkata)
Backend Development	14 to 17	Saturday	Training Session	4 Hrs	14:00-18:00 (Asia/Kolkata)
		Sunday	Training Session	4 Hrs	14:00-18:00 (Asia/Kolkata)
Testing & Development	18 to 19	Saturday	Training Session	4 Hrs	14:00-18:00 (Asia/Kolkata)
		Sunday	Training Session	4 Hrs	14:00-18:00 (Asia/Kolkata)
System Design, Data Structures & Algorithms	20 to 27	Saturday	Training Session	4 Hrs	14:00-18:00 (Asia/Kolkata)
		Sunday	Training Session	4 Hrs	14:00-18:00 (Asia/Kolkata)

Academic Doubt Solving Sessions:

Academic Doubts	Weekday Teaching Assistants doubts sessions (Mon, Tue, Thu, Fri) - 9pm-10pm (IST) (Sun) - 11am to 12pm (IST)	Link to join the session : https://knowledgehut.zoom.us/j/95378420521
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A detailed calendar** for the Session series will be available on our learning experience platform - PRISM.

It is highly recommended that you attend all the sessions to attain the best out of this program.

***Calendar is subject to change as per the requirements; however, that will be communicated to the learners in advance.*

Program Assessment Policy

The Full-Stack Software Development comprises the following types of graded components (with their corresponding weights):

Table 2 – Program Assessment Components

Gradable Assessment Type	Details	Weightage (%)	Frequency
Weekly Assessments	These multiple-choice based assessments would be available every week and would map to the content being covered in the week's learning agenda.	25 %	Every Week
Assignments	These are practical micro-projects that will appear across the program. Depending on the nature of the assignment, it may be auto-graded by the system or may involve evaluation by an expert evaluator.	25 %	Across the program
Employability (Interview Prep) Tests	These tests are designed to evaluate overall skills mapped to specific job roles such as Web Developer, Frontend Developer, Backend Developer, and Full-stack developer.	20 %	3 employability test at the end of the program
Hackathons	During the program, learners would be given problem statements and a fixed time to produce a working solution.	5%	2 Hackathons
Capstone Project	At the end of the program, the learner needs to build and submit a Fullstack application. This would be graded by a professional evaluator.	25 %	1 Capstone Project at the end of the program

Training Sessions and Weekly Rigour

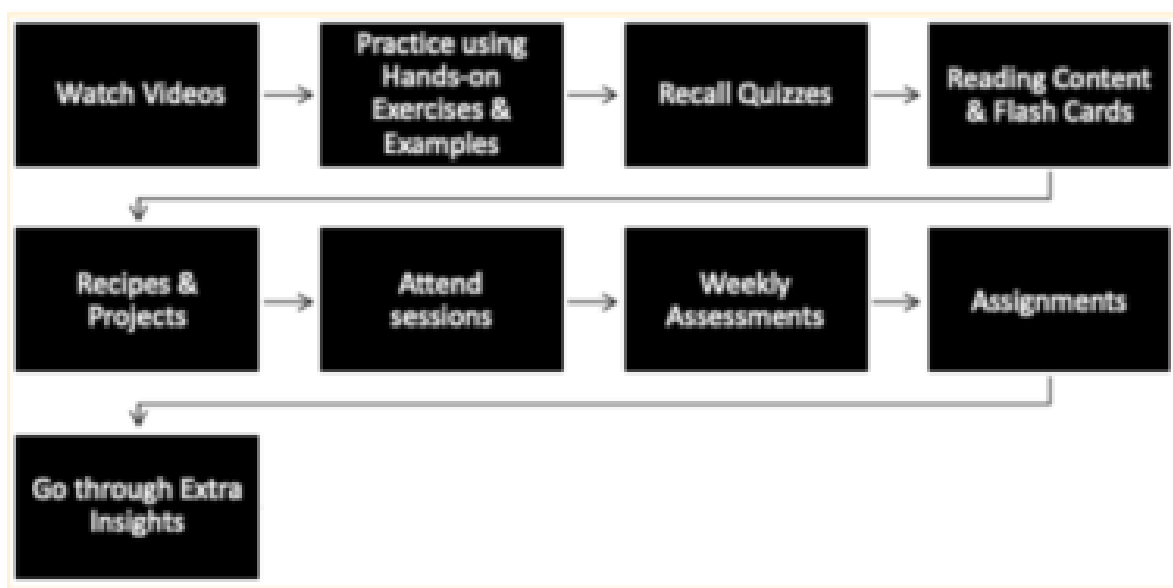
The program is divided into milestones and each milestone is spread over a couple of weeks. This spread can be seen in your learner account on the PRISM learning experience platform. All sessions will be delivered in English and learners must join the session only through their laptop using their registered email address. No change in the email address will be allowed after the course starts.

Weekly Rigour

This program is presented in a blended mode which involves a mix of self-learning content available on the PRISM learning platform and instructor-led sessions which would be conducted every week. On PRISM, the program is presented as a series of milestones, each of which is divided into weeks. You must focus on the current week and ensure completion of the listed learning, practice and assessment tasks, in addition to attending the sessions as per the calendar, the details of which are listed below.

Every week, begin by watching the videos and other learning material curated for that week. Work through the cloud-lab-enabled hands-on exercises where applicable to get maximum practice and use recall quizzes to strengthen your concepts. From time to time, we will incrementally curate short recipes and projects across the program, as an ongoing exercise. Once you've learned and practiced, you are required to complete the week's assessments and other gradable tasks as listed in the week. Please read the details in the next section.

Along with self-learning, you are required to attend training sessions.



Training Sessions

Every week, training sessions would be conducted by expert instructors as per the schedule available in your PRISM account.

- **Training Sessions:** These sessions would cover critical knowledge, workflows, best practices and professional guidance on weekly topics. They're an important part of your program and are thus mandatory to attend. These sessions would be 3-4 hours as per the topic/milestone.

During the course, if we encounter any session cancellation due to unforeseen circumstances we will schedule an extra session as per the curriculum completion requirement. Usually sessions will be conducted on weekends and learners are expected to attend and actively participate in these sessions.

The schedule for these Training sessions will be communicated to you separately and would be available on PRISM as well.

In case you're not able to attend a session due to prior commitments, a recording of the session will be provided and uploaded on the PRISM platform! However, we highly recommend that you attend all the training sessions and ask your doubts on a real-time basis in the problem solving sessions.

Assessments, Assignments, and Projects

Assessments

Every week, you will get up to two assessments in your weekly learning agenda on PRISM. These assessments cover topics covered within the week in the form of MCQ and MMCQ style questions and are mandatory.

Overall, you will get up to 2 attempts at every assessment and you must score an average of 70% or higher across all assessments, as part of the exit criteria.

Assignments and Topic-Level Projects

The program curriculum includes a number of assignments and micro-projects designed to give a practical experience to learners using the PRISM learning experience platform. These are also added incrementally to the program, from time to time as we continually enhance the curriculum. They are like micro-projects where you are given a problem statement, and resources to begin the exercise and you are required to produce and submit a solution. In some cases, these assets may also include a guided video/readable content that explains the step-by-step process required to achieve the desired result. The students will have ample time to go through the modules and assignments/projects.

While the terms may be used interchangeably depending on the problem statement/task, an assignment or a project is essentially a gradable asset and an attempt would produce a score that would count towards your program end score. All assignments/projects are mandatory, in the same way as assessments, and are critical to program completion and the exit criteria.

Auto-graded assignments:

These assignments are to be attempted online using the PRISM cloud labs coding environment. Once the assignment is submitted, it is instantly evaluated using built-in tests and the results are shared instantly. These assignments cannot be manually graded and the outcome is dependent on your adherence and attention to the problem statement and the task at hand.

Scores & Attempts

Assignments and topic-level projects contribute towards your program end score and are also a measure of your ability to implement your learnings in practical situations. Therefore, you are required to score $\geq 70\%$ on every assignment/project.

Assistance

Assignments/Projects are gradable hence we will not be able to provide support in formulating a solution. You may however request assistance if you're facing technical issues such as with the cloud labs and/or with provided resources. In such a case, please raise a ticket or reach out to your upGrad Buddy.

Mini Projects

After every module there are few mini projects to be worked on. You will get 2 attempts to complete this project. This needs to be completed within the time frame. Once completing the mini projects only, you will be eligible to attempt the Capstone project.

Program-end Capstone Project

Towards the end of the program, you are required to work on a Data Science project which needs to be submitted as the capstone. We will share ideas, outlines, and other documentation, for you to get started with the project. Details regarding the capstone project would be shared toward the end of the program. Once submitted, the projects shall be evaluated within 2 - 3 weeks, and a report would be shared with the learner.

Exit Criteria

You will be eligible to earn a certificate of completion showing that you have successfully completed the program if and only if you meet the Exit Criteria. This Certificate will be issued by upGrad-KnowledgeHut.

Following are the factors contributing to the Exit Criteria:

- 1. $\geq 80\%$ Attendance in the Training Session:**
 - a. This includes weekly training sessions.
- 2. $\geq 90\%$ Program Completion:**
 - a. This includes all weekly learning and practice tasks on PRISM such as videos, hands-on exercises, projects, and reading content.
- 3. $\geq 70\%$ score in all gradable assets & 100% attempt in all assessments**
- 4. $\geq 60\%$ in Projects:**
 - a. This includes each project at the end of each course as well as the Capstone Project.
 - b. Mandatory submission of Capstone Project.

Code of Conduct

As per the **Code of Conduct**, academic dishonesty and plagiarism, in any form, for any graded component or evaluation is not acceptable.

Learners are not allowed to request or share solutions for any graded component of the program on any platform. Any violation of this policy will result in zero score for that particular graded component. If a learner is found to violate this policy for a second time, upGrad will decide on the necessary disciplinary action to be taken.

Further, any form of plagiarism and impersonation, including learners presenting others' work as their own, sharing solutions with each other, copying codes from public repositories, will not be accepted. Submissions by learners will be subject to plagiarism checks to ensure compliance with this policy. Learners may also face random vivas by the concerned experts to ensure that submissions have been created by the learner.

Please note that upGrad has the final authority to decide upon the disciplinary action to be taken in case of plagiarism and impersonation.

Similarly, learner misbehavior on any online or offline forums will not be accepted. In case such misbehavior is noted, the learner may have to face appropriate disciplinary action.

Students are expected to restrict the emails only to the escalation IDs shared in this student manual or communicated separately while raising any query, concerns or grievance. Please refrain from sending any mass mailers while sending emails to the upGrad team.

upGrad does not tolerate any form of bullying and/ or harassment including but not limited to sexual harassment. If we are notified of any act of harassment committed by a learner towards co-learners or upGrad's representative, such learner shall have to face strict consequences, which shall be taken at the sole discretion of upGrad.

upGrad reserves the right to take strict action against any student indulging in mass mailers.

Peer-to-Peer Participation & Discussion Forum – Guidelines

The PRISM learning experience platform includes a section named 'Discussion' where learners can engage in peer-to-peer discussions and support. This forum is meant for academic queries, discussing project ideas and other program-related topics only where your peers can provide feedback and support.

We do not recommend this for active learning support as it is purely a peer-to-peer discussion feature. For active learning support, please see the next section on 'Getting Support'.

For any non-academic doubts and/or technical issues with PRISM, please raise a support ticket or reach out to your Buddy as explained below.

Note: Currently the Peer-to-Peer Participation & Discussion Forum feature is being revamped, we will be sharing you an update once the development is completed, you can reach out to your buddy if you need any other assistance.

Getting Support

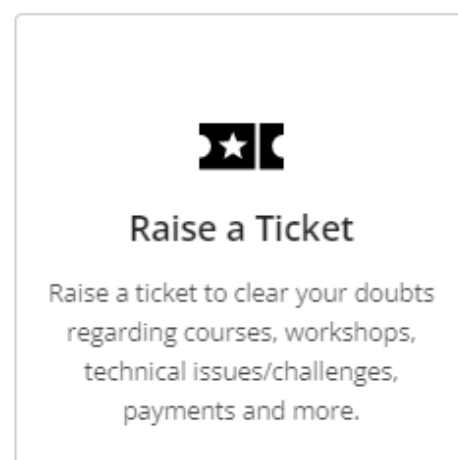
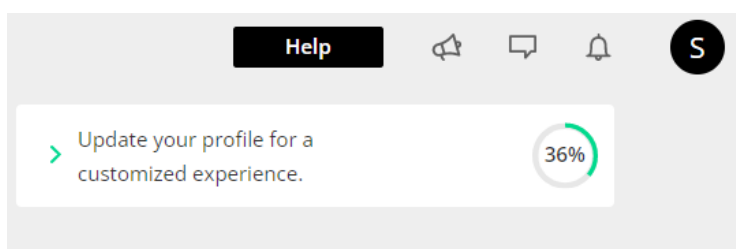
Learning and Academic Support

This program is presented in a blended learning model where you do not have to rely entirely on the instructor sessions for learning. Your program on the PRISM platform comes with hundreds of hours of self-learning content that we have curated across multiple weeks. As explained in the section on the weekly rigor, you have to consume the learning content every week on the platform, and practice using the cloud-lab-enabled hands-on exercises, before attending the weekly training and problem-solving sessions.

For academic / learning support, you get a dedicated doubt clarifying session Mon-Tue-Thu-Fri between 9-10 PM(IST) & Sun 11AM - 12PM (IST), and we strongly recommend making the best use of these sessions to clarify your doubts.

However, there may be times when you may need an additional helping hand to solve your queries across the week. We, therefore, have a team of qualified Teaching Assistants (TAs) available to resolve your queries. To avail their support, simply drop your query by using the following process:

1. On your PRISM dashboard, click on the Help button at the top right corner of your screen.



2. Select the type of support and type in your query.
3. You may also attach screenshots, code files, etc.

Once received, our TA team will respond back in a maximum time frame of 24-48 hours from receipt of the query.

To clarify your academic doubts, you can connect with our TA team on Mon-Tue-Wed-Fri between 8-9 PM(IST) & Sun 11AM - 12PM (IST), Session joining link will be shared to you by our Buddy's & Workshop Managers.

General Support

You may additionally use the ticket system for submitting queries related to cloud labs, content, career and placement and other categories and we'll ensure prompt redressal. In an unlikely situation where you've not received support on time, please reach out to your upGrad Buddy for priority support by writing to bootcamp-help@upgrad.com.

Escalation Matrix

upGrad believes in adopting a transparent approach with all its learners, and in order to match our learners' expectations in terms of grievance redressal, we have created an Escalation Matrix. Based on the kind of queries we receive from our learners, we have defined the levels of the Escalation Matrix. We request you to refer to the same in case you ever find the need to escalate an issue.

Type of Query	Point of Contact	TAT
Non-academic queries (For example, concerns on sessions, program structure-related queries)	Ticket through PRISM or write to bootcamp-help@upgrad.com & saptasree.c@upgrad.com	First Response within 24 Hrs (Working Hours) Working Hours: Mon - Fri (10 AM - 7 PM IST)
Academic-related issues/queries (If you find any issues with or have queries pertaining to the content on a session page)	Raise a ticket through learning platform PRISM. Click on "Help" and select the category "Academic Doubt"	First Response within 24 Hrs (Working Hours) Working Hours: Mon - Fri (10 AM - 7 PM IST)
Referral/ Refund / Fee receipts-related queries	bootcamp-refunds@upgrad.com and saptasree.c@upgrad.com	First Response within 24 Hrs (Working Hours) Working Hours: Mon - Fri (10 AM - 7 PM IST)
Not satisfied with the resolution provided by your upGrad buddy? Write to us with your ticket details to:	bootcamp-escalation@upgrad.com	First Response 24 Hrs (Working Hours) Working Hours: Mon - Fri (10 AM - 7 PM IST)
Academic Doubt	Weekday TA sessions (Mon, Tues, Thurs, Fri) - 9pm-10pm (IST), (Sun - 11am (IST)	Within the session duration. https://knowledgehut.zoom.us/j/95378420521
Weekend Support - For training Issues, Login issues, Non Academic queries	Ticket through PRISM or write to bootcamp-help@upgrad.com & anshika.s@upgrad.com	First Response within 24 Hrs (Working Hours) Working Hours: Sat - Sun (10 AM - 7 PM IST)