

Executive Post-Graduate Certificate in Cloud Computing and DevOps



Powered by
upGrad
AAGE KI SOCHO

Learn all 3 Cloud Platforms



Google Cloud

**IIT-B is the member institute of AWS Academy not upGrad.*



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About upGrad and IIITB



upGrad legacy

upGrad has delivered over 20 million hours of learning, delivering programs by collaborating with universities across the world including Duke CE, IIT Madras, IIIT Bangalore and Deakin Business School among others. Online education is a fundamental

disruption that will have a far-reaching impact.

upGrad was founded taking this into consideration.

upGrad is an online education platform to help individuals develop their professional potential in the most engaging learning Environment.

About
upGrad



10 million+
learners
in 100+
countries

5 out of 6
learners
get positive
career growth

93%
program
completion
rate

6000+
career
transitions

1200+
hiring
partners



IIITB pedigree

The IIITB faculty includes an average of 15+ years of experience. IIITB's experienced faculty will teach the core concepts of computer science along with important software development principles. These will be complemented by industry relevant case studies from major industry verticals by industry leaders with 8+ years of experience from upGrad's industry network.



Program Highlights

1

Mentored Industry Projects

In collaboration with top product and tech companies





2

Cloud Mastery Program

Comprehensive coverage of AWS, Azure, and GCP cloud services.





3

AI Integrated Curriculum

- Learn how GenAI-based tools are enhancing the Cloud and DevOps industry

4

DevOps Mastery Program

- Learn how to implement the DevOps pipeline.
- Advanced DevOps concepts such as DevSecOps and SynOps.

5

Exclusive Cloud Labs

- Access to exclusive add-on content and labs from AWS.

6

Certification-Driven Curriculum

- Tailored content designed to prepare you for cloud certification exams.

7

Certified Expert Instructors

- Learn from AWS- and Azure-certified experts with industry experience.

8

50+ Live Training Sessions

- Attend over 50 live sessions covering key cloud concepts and skills.
- Get hands-on experience with the instructor who will guide you at each step of your learning journey.

9

Personalised Industry Insights

- Receive personalised industry sessions based on your background and goals.

10

1:1 Mentorship calls

- Get personalised guidance through 1:1 mentorship calls.

11

Mock interview calls

- Prepare for job interviews with mock interview calls and feedback.

The upGrad Advantage



Job Opportunities

upGrad Opportunities

Job Opportunities Portal: Gain exclusive access to upGrad's Job Opportunities Portal which has 100+ openings from upGrad's hiring partners at any given time.

- Be the first to know vacancies to gain an edge in the application process.
- Connect with companies that are the best match for you.



Learning Support

Industry Expert Guidance

- Interactive Live Sessions with leading industry experts covering curriculum + advanced topics.
- Personalized Industry Session in small groups (of 10-12) with industry experts to augment program curriculum with customized industry based learning.



Career Assistance

Career Mentorship Sessions (1:1)

Get mentored by an experienced industry expert and receive personalized feedback to achieve your desired outcome.

High Performance Coaching (1:1)

Get a dedicated career coach after the program to help track your career goals, coach you on your profile, and support you during your career transition journey.

AI Powered Profile Builder

Obtain specific, AI powered inputs on your resume and LinkedIn structure along with content on real time basis.

Interview Preparation

Get access to Industry Experts and discuss any queries before your interview.



Our Academic and Industry Experts



Prof. Vivek



Vivek Yadav serves as the Technology Officer and Adjunct Faculty at IIIT Bangalore since August 2017. Additionally, he is the secretary head of the Vision Group for Higher Education and Research under the Government of Karnataka. He co-founded FullStackNet and is a distinguished alumnus of Government Engineering College - Rajiv Gandhi Technical University, MP.



Prof Thangaraju



With a Ph.D. in Physics, Dr. B. Thangaraju was a research associate at IISc., Bangalore, from 1996 to 2001. He then joined Wipro Technologies at Talent Transformation (2001-2016) before becoming a Professor at IIITB in 2017, where he also oversees the Open Source Technology Lab.



**Prof Chandrashekar
Ramanathan**



With over 25 years of experience in the field, Professor Chandrashekar Ramanathan has been a faculty member at IIT-B since 2007, focusing on data science, software engineering, and large-scale application development. He holds a Ph.D. from Mississippi State University, specializing in object-oriented databases.



Abhishek Sawhney

VISA

Abhishek, an experienced Solution Architect, specializes in cloud-native applications, DDD, Spring Boot, Java, REST, SQL, NoSQL, Docker, PCF, and Kubernetes. His focus on DDD ensures solutions are both technically sound and aligned with business objectives.



Biswanath Giri



Biswanath Giri is a Google Cloud Principal Architect with 15 years of experience in guiding businesses to successful cloud transitions. Specializes in highly scalable and secure solutions on GCP, with expertise in infrastructure, zero-trust security, Google Cloud networking, and Terraform automation. Holds certifications in Google Cloud, HashiCorp, Azure, and AWS, showcasing a broad understanding of cloud technologies.



Neeraj Kheria



Microsoft, Adobe & AWS certified professional with 15+ years of industry experience. Trained 20,000+ professionals, and counting, on all cloud technologies including AWS, Azure and GCP, DevOps.



Dipesh Garg

upGrad

Experienced engineer and technologist specializing in DevOps, Infrastructure, Security, Platforms, and Developer Productivity tools. Dipesh is skilled in architecting and building scalable teams, processes, systems, and tools for DevOps transformation



Ramaswamy Panchavarnam



Google Cloud Authorized Trainer with 23 years of IT experience. He has hands-on experience with Solaris, Linux, Aix, Clusters, AWS, Google Cloud, and Azure. Ramaswamy has designed and migrated thousands of workloads to the Cloud. He has delivered public webinars and published articles in reputed tech magazines.



Neelam Pawar



Neelam is a Customer Engineering Infrastructure Modernization Specialist at Google Cloud, with 12 years of experience across MNCs like Ericsson, Amdocs, Nokia, VVDN, and Microsoft. She excels in designing and implementing highly scalable, resilient architectures with zero-trust security. Neelam holds multiple certifications in AWS, GCP, and Azure



Nikita Mahajan



Certified in AWS and DevOps, Nikita brings over 12 years of experience as a technical trainer at IQUAD and an Assistant Professor at COEP & GHRCE. She has trained over 1000 learners, specializing in translating complex concepts into easily understandable visual aids for optimal learning outcomes.



Ravi Kulkarni



With over 12 years of experience in IT, Ravi has hands-on expertise in implementing DevOps, CI/CD automation, on-premises to cloud migration, Build & Release Management (SCM), Infrastructure Management, and AWS Cloud services.



Siddharth Sharma



Certified Trainer

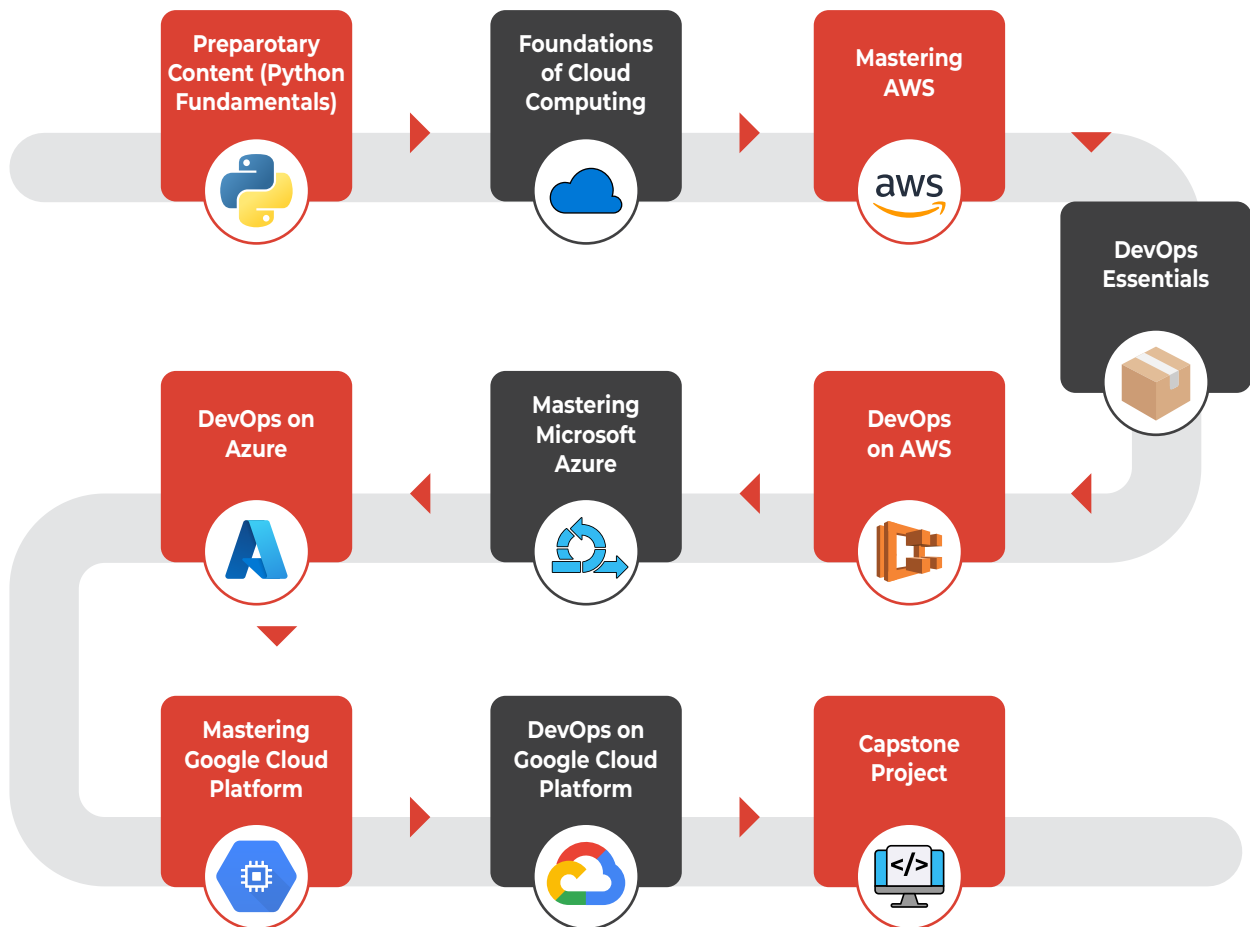
Siddharth Sharma, a seasoned Senior Consultant and Corporate Trainer, boasts a decade-long journey marked by impactful collaborations with industry leaders. His expertise in DevOps, cloud technologies (AWS, Azure, GCP), and programming languages (Java, Golang) has been instrumental in driving innovation. Siddharth is also renowned for his mentorship, empowering professionals to excel in the ever-evolving tech landscape.

Learning Path



The learner journey includes foundational courses in Python Fundamentals and Cloud Computing, followed by in-depth modules on AWS, Azure, and Google Cloud Platform. The curriculum covers key aspects such as databases, networking, security, and infrastructure management.

Learners then delve into DevOps practices, including Docker, CI/CD with Jenkins, and infrastructure automation with Terraform and Ansible. They also explore container orchestration with Kubernetes and learn about monitoring and logging in Kubernetes. The journey continues with advanced topics in DevOps, including DevSecOps and SynOps, as well as AI tools for Cloud and DevOps. The program culminates with capstone projects to apply the acquired skills in real-world scenarios.



Platform & Services



Amazon AWS EC2



Amazon S3



Azure Traffic Manager



Amazon DynamoDB



AWS Lambda



AWS EBS



AWS VPC



AWS RDS



AWS IAM



Azure CDN



Google Compute Engine



Google Cloud Load Balancing



Jenkins



Kubernetes



Terraform



Docker




Ansible

Certifications





Disclaimer: The AWS and Microsoft certifications are subject to the learner clearing the respective examinations




Program Syllabus

| Course | Module | Topic Name | Session Description | |
|---|------------------|--|--|---------|
| Prep Content | Prep Content | Python Fundamentals | Python Refresher/Fundamentals for Cloud and DevOps | Week 0 |
| | | Cloud Computing | Fundamentals of Cloud Computing | 1 Week |
|  Mastering | AWS Foundations | AWS Fundamentals | <ul style="list-style-type: none"> - Overview of Amazon Web Services (AWS) - Setting up an AWS account - Overview of AWS services (EC2, S3, RDS, VPC, IAM) | 12 Week |
| | | AWS Databases | <ul style="list-style-type: none"> - EC2 (Elastic Compute Cloud) for virtual servers - S3 (Simple Storage Service) for object storage - EBS (Elastic Block Store) for block storage - RDS (Relational Database Services) | |
| | | AWS Networking and Security | <ul style="list-style-type: none"> - VPC (Virtual Private Cloud) for networking - IAM (Identity and Access Management) for security - Security Groups and Network ACLs - Auto Scaling and Load balancing | |
| | Mastering DevOps | DevOps Basics and Introduction to Docker | <ul style="list-style-type: none"> - Understanding DevOps principles and practices - Version Control Systems (e.g., Git) - Introduction to Docker and containerization - Docker architecture and components - Implementing Docker, Docker for networking and storage - Docker Compose for multi-container applications | |
| | | CI/CD and Jenkins | <ul style="list-style-type: none"> - Continuous Integration (CI) concepts and practices - Introduction to Jenkins and its features - Setting up Jenkins pipelines for CI/CD - Integrating Jenkins with version control systems (e.g., Git) - Jenkins plugins for enhancing CI/CD pipelines - Hands-on setup of CI/CD pipelines using AWS CodeBuild | |
| | | Infrastructure as Code (IaC) and Terraform | <ul style="list-style-type: none"> - Introduction to Infrastructure as Code (IaC) with Terraform - Terraform syntax and configuration files - Provisioning and managing infrastructure resources with Terraform - Terraform state management and workspaces - Best practices for using Terraform in production environments | |
| | | Configuration Management and Ansible | <ul style="list-style-type: none"> - Introduction to Ansible for configuration management and automation - Ansible architecture and components (Control Node, Managed Nodes) - Ansible playbooks and YAML syntax - Managing system configurations with Ansible roles and tasks - Ansible Tower for centralized management and orchestration | |

Program Syllabus continued...

| Course | Module | Topic Name | Session Description | | |
|---|-----------------------|--|---|---------|--------|
|  Mastering | Mastering DevOps | Container Orchestration using Kubernetes | <ul style="list-style-type: none"> - Introduction to Kubernetes and container orchestration - Kubernetes architecture and components (Master Node, Worker Node, Pods, Services) - Deploying applications on Kubernetes clusters - Managing Kubernetes resources with kubectl - Kubernetes networking and storage options | 12 Week | |
| | | Monitoring and Logging in Kubernetes | <ul style="list-style-type: none"> - Advanced Kubernetes concepts (Deployments, StatefulSets, DaemonSets) - Kubernetes scaling and auto-scaling - Kubernetes security best practices - Monitoring and logging in Kubernetes clusters - Kubernetes cluster administration and maintenance | | |
| | DevOps on AWS | CI/CD on AWS | <ul style="list-style-type: none"> - Container orchestration with Amazon ECS (Elastic Container Service) - Docker Swarm on AWS | | 1 Week |
| | | Infrastructure as Code (IaC) on | <ul style="list-style-type: none"> - Automating infrastructure deployment with AWS CloudFormation - Using AWS OpsWorks for configuration management - CloudWatch | | |
| | Course Project | AWS Course Project | Assignment Submission | | |
| Buffer Week | | | | | |
|  Mastering | Azure Fundamentals | Introduction to Azure | <ul style="list-style-type: none"> - Overview of Microsoft Azure - Setting up an Azure account - Overview of Azure services (Virtual Machines, Blob Storage, Azure SQL Database) | 8 Weeks | |
| | | Azure Compute Services, Azure Network and Security | <ul style="list-style-type: none"> - Azure Virtual Machines - Azure App Service - Azure Functions - Azure Virtual Network - Azure Security Center - Azure Active Directory | | |
| | | Azure Administrator Prep | <ul style="list-style-type: none"> - Azure Administrator Prep | | |
| | DevOps on Azure | CI/CD on Azure | <ul style="list-style-type: none"> - Implementing CI/CD pipelines with Azure DevOps - Integrating Azure Repos and Azure Pipelines - Container orchestration with Azure Kubernetes Service (AKS) | | 1 Week |
| | | Infrastructure as Code (IaC) on Azure | <ul style="list-style-type: none"> - Managing containers with Azure Container Instances (ACI) - Deploying infrastructure with Azure Resource Manager (ARM) templates - Using Azure Automation for configuration management | | |
| Course Project | Course Project | Assignment Submission | | | |

Program Syllabus continued...

| Course | Module | Topic Name | Session Description | |
|--|--|--|---|---------|
|  Mastering | Google Cloud Platform Fundamentals | Introduction to Google Cloud Platform | <ul style="list-style-type: none"> - Overview of Google Cloud Platform (GCP) - Setting up a GCP account - Overview of GCP services (Compute Engine, Cloud Storage, Cloud SQL) | 5 Weeks |
| | | Google Cloud Platform Compute Services, Google Cloud Platform Network and Security | <ul style="list-style-type: none"> - Google Compute Engine for virtual machines - Google Cloud Storage for object storage - Google Cloud SQL for managed databases - Google Virtual Private Cloud (VPC) - Google Cloud Identity and Access Management (IAM) - Google Cloud Security Scanner | |
| | DevOps on Google Cloud Platform | CI/CD on Google Cloud Platform | <ul style="list-style-type: none"> - Setting up CI/CD pipelines with Google Cloud Build - Integrating with Google Cloud Source Repositories - Container orchestration with Google Kubernetes Engine (GKE) | |
| | | Infrastructure as Code (IaC) on Google Cloud Platform | <ul style="list-style-type: none"> - Managing containers with Google Kubernetes Engine (GKE) - Infrastructure provisioning using Deployment Manager - Using Puppet for configuration management on GCP | |
| | Course Project | Course Project | Assignment Submission | |
|  Advanced DevOps | Advanced DevOps | DevSecOps | <ul style="list-style-type: none"> - Introduction to DevSecOps principles and practices - Integrating security into the DevOps pipeline - Security automation and tooling - Code analysis and vulnerability scanning - Container security best practices - Secrets management and encryption - Compliance as code - Incident response and remediation in DevOps workflows | 2 Weeks |
| | | Advanced DevOps and SynOps | <ul style="list-style-type: none"> - Implement the DevOps pipeline for an advanced use case - Introduction to SynOps methodology and principles - Implementing SynOps for optimizing operational processes - Case studies and real-world examples of SynOps implementations - Challenges and considerations in adopting SynOps approach | |
|  Gen-AI Application | Become a 10x Cloud and DevOps Engineer | AI Tools for Cloud and DevOps | <ul style="list-style-type: none"> - Understand how GenAI is impacting Cloud and Cloud-based services and functions - Understand how GenAI is impacting DevOps using tools like Harness, APMs, CodeGuru, Snyk and more - Case studies and real-world examples of AI in DevOps implementations - Implement a small practice project on DevOps | 3 Weeks |

Capstone Project: 2 Weeks

Total 34 Weeks

Sample Industry Courses

Project 1



E-Commerce Application Deployment on AWS with CI/CD & Infrastructure as Code

Create a secure and scalable e-commerce infrastructure on AWS, integrating a web server, database server, and high-availability networking for optimal performance. Employ Jenkins for CI/CD, Terraform for IaC, and AWS CloudWatch for monitoring the environment.

Tools and Platforms:



AWS CloudWatch



Jenkins



Terraform



Amazon EC2

Project 2



Azure Cloud Infrastructure Deployment for a Web Application

Deploy a web application on Azure with compute services, network, security settings, and Azure services for management and monitoring. Implement CI/CD pipelines with Azure pipelines. Use IaC with Azure Resource Manager templates for infrastructure configuration.

Tools and Platforms:



Azure Monitor



Azure Pipelines



Azure Resource Manager



Azure Security Center

Project 3



Scalable Web Application Deployment on Google Cloud Platform

Deploy a web application on Google Cloud Platform (GCP) using Compute Engine and Cloud Load Balancing. Ensure network security with VPC and Cloud IAP. Implement CI/CD pipelines with Cloud Build and use Deployment Manager or Terraform for Infrastructure as Code (IaC).

Tools and Platforms:



Google Cloud Build



Google Deployment Manager



Google Compute Engine

Project 4



Cloud-Based IoT Data Analytics Platform Deployment

Deploy an IoT data analytics platform on cloud using VMs for compute, object storage for data, and managed DB for analytics. Use CI/CD, containerization, and orchestration for scalability. Utilize IaC for defining infrastructure. Implement monitoring and logging.

Tools and Platforms:



Jenkins



Terraform



Docker



Kubernetes

Program Details & Admission Process

Program Duration

8 months

Format

100% Live

Eligibility

Bachelor's Degree or final year students with 50% or equivalent marks.

Admission Process



Step 1

Fill the application form

Its' easy! Swipe right on your future and fill out this quick form



Step 2

Get Shortlisted

Show off your skills in your application. Only the best will join our team.



Step 3

Pay and Start Learning

Act now! Pay your admission fee & secure coveted offer letter to this life-changing program.





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