



Training | Placements | Outsourcing

CLOUD COMPUTING



About Company

SkillUp Bharat is a leading platform that offers technical and non-technical courses designed to prepare students for industry challenges.

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WHY TO CHOOSE US!

- 1. Industry-Relevant Courses**
- 2. Hands-On Internships**
- 3. Real-Time Project Experience**
- 4. Placement Support**

Cloud Computing Syllabus

Irrespective of any domain

Description

The Cloud Computing course offered by Skillup Bharat provides an extensive learning experience focused on building expertise in cloud technologies, with a particular emphasis on Amazon Web Services (AWS). This course covers foundational to advanced cloud concepts, including cloud architecture, services, and deployment models such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS).

A key component of the course is hands-on experience with AWS services, where participants learn to deploy virtual machines, manage storage with S3, and configure networking with VPC and Route 53. The program also includes advanced AWS services like Lambda for serverless computing, RDS for cloud databases, and CloudFormation for infrastructure automation. In addition to AWS, the course provides exposure to other cloud platforms like Microsoft Azure and Google Cloud, offering a broad perspective on multi-cloud strategies.

Throughout the course, learners gain practical skills through real-world projects, including cloud infrastructure setup, serverless application development, and cloud-based security and compliance measures. By the end of the program, participants will be proficient in cloud deployment, security best practices, and cost optimization, making them job-ready for roles such as Cloud Architect, Cloud Engineer, or DevOps Engineer. The course also includes dedicated placement support to help learners secure positions in cloud computing.

Expectations and Goals

- **Comprehensive Understanding of Cloud Concepts**
- **Proficiency in AWS Services**
- **Multi-Cloud Exposure**
- **Hands-on Cloud Experience**
- **Multi-Cloud Exposure**
- **Security and Compliance Skills**
- **AWS Expertise**
- **Cloud Infrastructure Deployment**
- **Cloud Automation and DevOps**

Complete Cloud Computing Bootcamp 2024

Course Syllabus:

Module 1: Introduction to Cloud Computing and AWS

1.1 Overview of Cloud Computing

- **Definition and Benefits of Cloud Computing**
- **Cloud Service Models: IaaS, PaaS, SaaS**
- **Cloud Deployment Models: Public, Private, Hybrid**

1.2 Introduction to AWS

- **AWS Global Infrastructure: Regions, Availability Zones, Edge Locations**
- **Overview of AWS Services and Solutions**
- **AWS Free Tier and Account Setup**

1.3 Navigating the AWS Management Console

- Understanding the AWS Dashboard
- Using the AWS Command Line Interface (CLI)
- Introduction to AWS SDKs and Development Tools

Module 2: AWS Compute Services

2.1 Amazon Elastic Compute Cloud (EC2)

- EC2 Instance Types and Families
- Launching, Configuring, and Managing EC2 Instances
- Security Groups, Key Pairs, and Elastic IPs
- EC2 Auto Scaling and Elastic Load Balancing (ELB)

2.2 Amazon Elastic Container Service (ECS) and Elastic Kubernetes Service (EKS)

- Introduction to Containers and Docker on AWS
- Deploying and Managing Containers with ECS
- Introduction to Kubernetes and EKS

2.3 AWS Lambda

- Introduction to Serverless Computing
- Creating and Managing Lambda Functions
- Event-Driven Architecture and Use Cases

2.4 AWS Elastic Beanstalk

- Simplified Application Deployment with Elastic Beanstalk
- Managing Environments and Deployments
- Scaling and Monitoring Applications

Module 3: AWS Storage Services

3.1 Amazon Simple Storage Service (S3)

- S3 Buckets, Objects, and Storage Classes
- Access Control, Versioning, and Lifecycle Policies
- S3 Static Website Hosting and Data Transfer Acceleration

3.2 Amazon Elastic Block Store (EBS)

- EBS Volume Types and Performance Characteristics
- Creating and Attaching EBS Volumes
- EBS Snapshots and Data Recovery

3.3 Amazon Elastic File System (EFS)

- Introduction to Managed File Storage with EFS
- Mounting EFS to EC2 Instances
- Performance and Pricing Models

3.4 AWS Storage Gateway

- Hybrid Cloud Storage Solutions
- File, Volume, and Tape Gateway Use Cases
- Integrating On-Premises Storage with AWS

Module 4: AWS Networking and Content Delivery

4.1 Amazon Virtual Private Cloud (VPC)

- VPC Components: Subnets, Route Tables, Internet Gateways
- Security Groups, Network ACLs, and VPN Connections
- VPC Peering, Transit Gateway, and Direct Connect

4.2 Elastic Load Balancing (ELB) and Amazon Route 53

- Configuring and Managing ELB (Application, Network, and Classic)
- DNS Management with Amazon Route 53
- Route 53 Routing Policies and Health Checks

4.3 AWS CloudFront and CDN

- Introduction to Content Delivery Networks (CDNs)
- Configuring and Managing AWS CloudFront Distributions
- Integrating CloudFront with S3 and Custom Origins

Module 5: AWS Databases

5.1 Amazon RDS (Relational Database Service)

- Overview of Supported Databases (MySQL, PostgreSQL, Oracle, SQL Server)
- Setting Up, Managing, and Scaling RDS Instances
- RDS Backups, Snapshots, and Multi-AZ Deployments

5.2 Amazon DynamoDB

- Introduction to NoSQL Databases
- Creating and Managing DynamoDB Tables
- DynamoDB Streams, Global Tables, and Indexing

5.3 Amazon Redshift

- Data Warehousing with Amazon Redshift
- Managing Redshift Clusters and Databases
- Redshift Spectrum and Integration with S3

5.4 Amazon Aurora

- Introduction to Amazon Aurora (MySQL and PostgreSQL Compatible)
- Aurora Serverless and Global Databases
- Performance Tuning and Best Practices

Module 6: AWS Identity and Access Management (IAM)

6.1 Introduction to IAM

- Understanding IAM Users, Groups, and Roles
- IAM Policies and Permissions Management
- Multi-Factor Authentication (MFA) and Best Practices

6.2 AWS Organizations and Account Management

- Creating and Managing AWS Organizations
- Consolidated Billing and Cost Management
- Service Control Policies (SCPs)

6.3 AWS Cognito

- Managing User Sign-Up, Sign-In, and Access Control with Cognito
- Federated Identity and Social Identity Providers
- Integrating Cognito with Mobile and Web Applications

Module 7: AWS Security and Compliance

7.1 AWS Security Fundamentals

- Shared Responsibility Model
- AWS Compliance Programs and Certifications
- Securing Data at Rest and in Transit

7.2 AWS Key Management Service (KMS) and CloudHSM

- Managing Encryption Keys with AWS KMS
- Integrating KMS with Other AWS Services
- Hardware Security Module (HSM) with AWS CloudHSM

7.3 AWS Identity and Access Best Practices

- Least Privilege Access
- IAM Policy Simulator and Access Analyzer
- Security Auditing with AWS Config and CloudTrail

Module 8: AWS Monitoring and Logging

8.1 Amazon CloudWatch

- Monitoring AWS Resources with CloudWatch
- Setting Up Alarms, Logs, and Events
- Custom Metrics and Dashboards

8.2 AWS CloudTrail

- Tracking API Calls and User Activity
- Setting Up CloudTrail for Auditing and Compliance
- Integrating CloudTrail with CloudWatch and S3

8.3 AWS Config

- Continuous Configuration Monitoring
- Setting Up AWS Config Rules and Compliance Reporting
- Integrating AWS Config with AWS Systems Manager

Module 9: AWS Automation and DevOps

9.1 AWS Elastic Beanstalk for DevOps

- Automating Application Deployment with Elastic Beanstalk
- Managing Environments and Deployments
- Scaling and Monitoring Applications

9.2 AWS CloudFormation

- Infrastructure as Code with AWS CloudFormation
- Writing CloudFormation Templates
- Stack Management and Nested Stacks

9.3 AWS CodePipeline, CodeBuild, and CodeDeploy

- Continuous Integration and Delivery with AWS CodePipeline
- Automating Builds with CodeBuild
- Deploying Applications with CodeDeploy

9.4 AWS OpsWorks

- Configuration Management with OpsWorks
- Integrating OpsWorks with Chef and Puppet
- Managing and Scaling OpsWorks Stacks

Module 10: Advanced AWS Services and Architectures

10.1 AWS Lambda and Serverless Architectures

- Introduction to Serverless Computing with AWS Lambda
- Event-Driven Architectures with Lambda and API Gateway
- Use Cases and Best Practices for Serverless Applications

10.2 AWS Machine Learning Services

- **Introduction to Amazon SageMaker, Comprehend, and Rekognition**
- **Building and Deploying Machine Learning Models**
- **Integrating AI/ML Services into Applications**

10.3 AWS IoT and Edge Computing

- **Introduction to AWS IoT Core and Greengrass**
- **Managing IoT Devices and Data Streams**
- **Edge Computing with AWS IoT and Lambda@Edge**

Module 11: Cost Management and Optimization

11.1 AWS Billing and Cost Management

- Understanding AWS Pricing Models
- Setting Up Billing Alerts and Reports
- Using the AWS Pricing Calculator and Cost Explorer

11.2 AWS Trusted Advisor

- Introduction to AWS Trusted Advisor
- Cost Optimization Recommendations
- Security, Fault Tolerance, and Performance Optimization

11.3 AWS Savings Plans and Reserved Instances

- Introduction to AWS Savings Plans and Reserved Instances
- Choosing the Right Pricing Model for Your Workloads
- Managing and Modifying Reserved Instances

Module 12: AWS Certification Preparation

12.1 Overview of AWS Certifications

- Certification Paths: Foundational, Associate, Professional, and Specialty
- Exam Structure and Question Types
- Study Resources and Tips

12.2 Practice Exams and Case Studies

- Taking Practice Exams for AWS Certifications
- Analyzing Real-World AWS Case Studies
- Group Discussions and Knowledge Sharing

12.3 Final Capstone Project

- Designing and Implementing a Comprehensive AWS Solution
- Deploying and Managing the Solution on AWS
- Presentation and Review of the Capstone Project



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**Master New Skills, Unlock
New Opportunities!**