As a pre-requisite to this course, we recommend students complete the AWS Certified Cloud Practitioner certification. Additionally, it is good to have an AWS Solutions Architect Associate Certification.

AWS Certified Cloud Practitioner (recommended)	Course link	Exam Prep link
AWS Solutions Architect Associate (optional)	Course link	Exam Prep link

	Cloud engineer core concepts	Approx. duration (in hours)	Courses to do	Pre-requisites	Description	Outcomes expected
1	Monitoring in the cloud	6	Observability on AWS	We recommend that attendees of this course have familiarity with monitoring and logging and working knowledge of day-to-day cloud operations	In this course, you will learn the three pillars of observability: Tracing, monitoring and logging. You will also discover a wide range of services that can help elevate your cloud operations practices, transforming them from a tactical day-to-day routine into a strategy that delivers business outcomes for your organization.	The learner will be able to implement logging, monitoring and alerting solutions using AWS CloudWatch or similar tools to ensure the health and availability of the cloud infrastructure and applications.
			Amazon CloudWatch - Troubleshooting	We recommend that attendees of this course have basic knowledge of the AWS Management Console, basic knowledge of CloudWatch, and basic knowledge of logs, events, troubleshooting, and command line tool usage	In this course, you will learn to recognize and resolve issues with CloudWatch. You will learn to employ best-practice troubleshooting methodologies when investigating CloudWatch issues, locate and apply available AWS Support documentation for CloudWatch issues, and recognize and record relevant information to escalate CloudWatch issues to the AWS Support team.	
2	Configuration and optimization	2.5	Right Size your EC2 instance	We recommend that attendees of this course have a knowledge of the workings of basic cloud services, an overview of compute services, specifically EC2, and an overall knowledge of how to build using EC2	In this course, you will learn how to evaluate current Amazon EC2 instances to determine if they are rightsized, and understand and state how instance type selection affects rightsizing and cost optimization of your Amazon EC2 workload. You will also be able to what is needed to be considered while moving to a new instance type to cost optimize and rightsize your Amazon EC2 instance, and describe the process for changing an Amazon EC2 instance type based on compatibility and architectural considerations.	The learner will be able to configure and optimize AWS services to ensure high performance, scalability, and cost efficiency of the cloud infrastructure.

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			AWS Cost Optimization Series	None	In this series, you will learn to leverage the different pricing models and tiers, use upfront payment options and savings plans, and to conduct well-architected reviews to optimize costs. You will learn to use the following services/ features: AWS pricing calculator, AWS Trusted Advisor, AWS Cost Categories, AWS Cost Explorer, AWS Cloud Watch, and AWS Budgets.	
3	Security in the Cloud	7.5	AWS Security Fundamentals	None	In this course, you will learn how to identify the security benefits and responsibilities when using the AWS Cloud, describe the access control and management features of AWS, understand the different data encryption methods to secure sensitive data, describe how to secure network access to your AWS resources, and determine which AWS services can be used for security logging and monitoring	The learner will be able to implement and enforce security best practices, manage user access and permissions, and ensure compliance with relevant regulations and policies within the AWS environment.
			AWS Security best practices	Before attending this course, participants should have basic knowledge of fundamentals and essentials of AWS security services and features. They should also have working knowledge about information security concepts, techniques, and paradigms in the areas of networking, operating systems, data encryption, and operational controls	In this course, you will learn to differentiate security responsibilities according to the AWS shared responsibility model, describe the security pillar of the AWS Well-Architected Framework understand Cybersecurity Framework (CSF) alignment and use as a standards-based approach to security controls, identify organizational challenges and threats, and describe a standards-based approach to best practices. These courses also introduce students to topics that are important for security and cloud professionals to know.	

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			Security Governance at Scale	Before attending this course, participants should have basic knowledge of fundamentals and essentials of AWS security services and features. Optionally, learners can also familiarize themselves with the following AWS services/ features: AWS Cloud Management Assessment AWS Control Tower Automated Landing Zone AWS Service Catalog	The governance course explains the importance of governance at scale, describe a solution for using governance at scale, specify a solution for using developer speed with preventive controls, define a solution for implementing operational capabilities, apply governance best practices, and to identify additional resources with Amazon Web Services (AWS)	
4	DevOps	4.5	Getting started with DevOps on AWS?	We recommend that attendees of this course have general knowledge of the software development cycle, general IT knowledge, and general Cloud Computing Knowledge	In this course, you will learn to describe the DevOps methodologies of culture, practices, and tools, describe the why adopting a DevOps cultural philosophy is integral to success, summarize Amazon's transformation to DevOps, categorize and describe key AWS DevOps services that support the application lifecycle, identify the AWS services used to automate the continuous integration and continuous delivery (CI/CD) process, and describe how to create and control a CI/CD pipeline.	The learner will be able to understand DevOps terminology, CI/CD pipelines and managing

			Best Practices for DevOps on AWS	None	You will learn about all of the components required to align your DevOps practices to the pillars of the AWS Well-Architected Framework, review organization adoption, development lifecycle, quality assurance, automated governance, and observability.	pipelines.
5	IAC	3.5	Getting started with AWS CloudFormation	None	In these courses, you will learn to explain the purpose and functionality of CloudFormation, listing the typical use cases, and describe how CloudFormation fits into the larger domain context. You will also be able to specify what it would take to implement CloudFormation in a real-world scenario, explain the cost structure of CloudFormation, and to show how to use CloudFormation from the AWS Management Console and using the AWS Command Line Interface (AWS CLI).	The learner will be able to utilize Infrastructure as Code tools such as AWS Lambda, AWS RDS, and AWS Cloud Formation to automate the provisioning and
			AWS Lambda Foundations	None	In this course, you will learn to define how Lambda works, examine Lambda function permissions and security, demonstrate best practice for writing Lambda functions, deploy and test your serverless applications, explore best practices for effective code writing, and monitor and troubleshoot Lambda functions.	management of AWS resources
			AWS Database services		In this course, you will learn how to recognize the differences between databases that are self-managed and managed by AWS, differentiate the various AWS databases, and describe the value of the Amazon Relational Database Service. You will also learn to describe the Amazon Aurora architecture, define key features of Amazon Aurora, including read replica, backup and restore, instant crash recovery, fast and predictable failover, and survivable cache, describe about how Amazon Aurora achieves high performance, and understand Amazon Aurora MySQL Sysbench performance results.	

6	Cloud Infra Deployment	4.25	Amazon EC2 basics	We recommend that attendees of this course have reviewed concepts covered in AWS Cloud Practitioner exam.	In this course, you will learn to identify the different families of EC2 instances and the target workload for each family, balance cost and performance when selecting an EC2 instance type, and to discuss the advantages of keeping up to date with new instance types.	The learner will be able to assist in the design, implementation, and deployment of cloud infrastructure solutions on AWS, including virtual machines, cloud storage, databases, networking, and security components.
			Storage on AWS	None	In this course you will learn about the different types of storage services available to customers who are in different stages of their cloud journeys, whether they are cloud native or are migrating or anywhere in between. Combining with this associated function such as data transfer and data protection, you will learn to examine scenarios to design the best storage solutions for your customer.	

Recommended Labs (AWS Educate):

	Lab course link	Description- and learning outcomes	Duration (in hours)
1	Getting Started with Compute (Lab)	After completing this lab, you will be able to launch an EC2 instance with termination protection turned on, monitor your EC2 instance, modify the security group that your web server is using to allow HTTP access, connect to your EC2 instance by using the AWS Systems Manager Fleet Manager, manage the state of an EC2 instance, change your EC2 instance type, test termination protection, and explore Amazon EC2 limits.	2

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2	Getting Started with Storage	After completing this lab, you will be able to create a bucket in Amazon S3, configure a bucket to host a static website, upload content to a bucket, allow enable public access to bucket objects, securely share a bucket object by using a presigned URL, secure a bucket by using a bucket policy, update the website, and view object versions in the Amazon S3 console.	2
3	Getting Started with Networking	After completing this lab, you will be able to understand the basic components of a VPC, deploy a basic VPC with public subnets, and deploy an EC2 instance into a VPC	2
4	Getting Started with Cloud Operations	After completing this lab, you will be able to launch AWS Pricing Calculator, add and configure services in AWS Pricing Calculator, review and download the estimate, and save and share the estimate.	2
5	Getting Started with Security	After completing this lab, you will be able to explore precreated IAM users and groups, inspect IAM policies as applied to the pre-created groups, following a real-world scenario, add users to groups with specific capabilities enabled, locate and use the IAM sign-in URL, experiment with the effects of policies on service access	2

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