

Post Graduate Program in Cloud Computing



Table of Contents

About the Program	3
Key Features of the Program	4
About Caltech Center for Technology and Management Education (Caltech CTME)	05
About Simplilearn	06
Program Eligibility Criteria and Application Process	07
Careers in Cloud Computing	09
Program Outcomes	10
Who Should Enroll in This Program	11
Learning Path Visualization	12
Core Topics	
Electives	
Certificate	25
Advisory Board	26



About the Program



Cloud services have become the leading solution for organizations seeking secure and scalable IT infrastructure. The trend toward cloud adoption has led to an increased demand for qualified professionals who can design, implement, and manage cloud solutions.

Our Post Graduate Program in Cloud Computing is designed to equip you with the technical skills and training required to succeed in this rapidly-growing industry. With expert instruction and engaging hands-on projects, you will gain invaluable experience with the two leading cloud providers, AWS and Microsoft Azure, to prepare you for real-world challenges. Our rigorous curriculum covers many topics, including cloud provider selection, application migration, performance testing, load balancing, autoscaling, identity access management, disaster recovery, storage services, multi-cloud deployment, database management, and more.

Through a combination of theoretical knowledge and practical experience, you will engage in integrated labs, sandboxed cloud labs, self-paced videos, live virtual classes led by industry experts and peer-to-peer collaboration.

Upon completing the program, you will gain access to Simplilearn's Job Assistance services, including personal career mentoring, expert resume writing and interview preparation.

Key Features of the Program



Caltech CTME Post Graduate Certificate



Enrolment in Simplilearn's JobAssist



Receive upto 30 CEUs from Caltech CTME



Get noticed by the top hiring companies



Master Classes taught by Caltech CTME instructor



40+ Hands-On Projects with Integrated Labs



Online Convocation by Caltech CTME Program Director



3 Capstone Projects for an applied learning approach



Caltech CTME Circle Membership



8X higher live interaction with live online classes by industry experts

About Caltech Center for Technology and Management Education (Caltech CTME)

Founded in 1891, Caltech is a world-renowned science and engineering institute that marshals some of the world's brightest minds and most innovative tools to address fundamental scientific questions and pressing societal challenges. Caltech prizes excellence and ambition. The contributions of Caltech's instructors and alumni have earned national and international recognition, including 38 Nobel Prizes and nearly 60 National Medals of Science. The Institute manages the Jet Propulsion Laboratory (JPL) for NASA.

CTME is embedded in Caltech's Division of Engineering and Applied Science. Caltech CTME has a unique role to play in applying the capabilities of scientists and engineers to the challenges of today's technology-driven businesses. Caltech CTME applies executive education and professional development directly to real-world problems. Caltech CTME experts teach the tools and perspectives that elevate careers and help companies achieve their goals.

Upon completing this program, you will receive:

- ✓ Caltech CTME Post Graduate Certificate
- ✓ Individual Course Completion Certificate for all the Courses in the Learning Path from Simplilearn
- ✓ Program Performance Report for the Entire Learning Path in the Program
- ✓ Receive upto 30 CEUs From Caltech CTME upon course Completion
- ✓ Access to Caltech Circle Membership
- ✓ Physical Certificate with Caltech CTME Kit (On Request)

About Simplilearn

Simplilearn is the world's #1 online bootcamp provider that enables learners through rigorous and highly specialized training. We focus on emerging technologies and processes that are transforming the digital world, at a fraction of the cost and time as traditional approaches. Over one million professionals and 2000 corporate training organizations have harnessed our award-winning programs to achieve their career and business goals.



Program Eligibility Criteria and Application Process

Those wishing to enroll in the Post Graduate Program in Cloud Computing in collaboration with Caltech CTME will be required to apply for admission.

Eligibility Criteria

For admission to this Post Graduate Program in Cloud Computing, candidates:

- ✓ Should have a bachelor's degree in any discipline with an average of 50% or higher marks
- ✓ May come from a non-programming background
- ✓ Do not need to have prior work experience



Application Process

The application process consists of three simple steps. An offer of admission will be made to the selected candidates and accepted by the candidates upon payment of the admission fee.



Submit an Application

Complete the application and include a brief statement of purpose to tell our admissions counselors why you're interested and qualified for this Post Graduate Program in Cloud Computing.



Application Review

After you submit your application, a panel of admissions counselors will review your application and statement of purpose to determine your qualifications and interest in the program.



Admission

An offer of admission will be made to qualified candidates. You can accept this offer by paying the program fee.

Talk to an Admissions Counselor

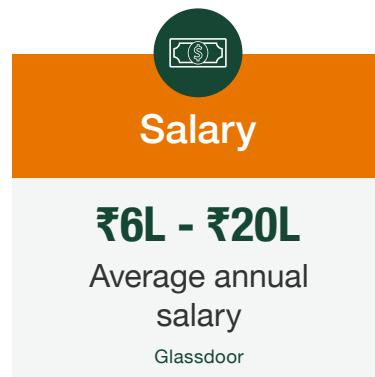
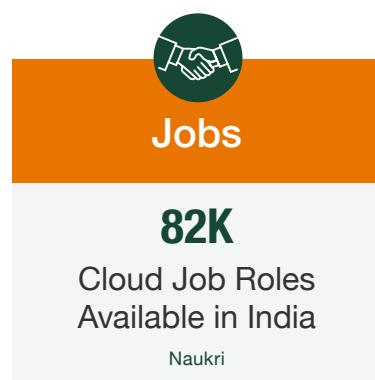
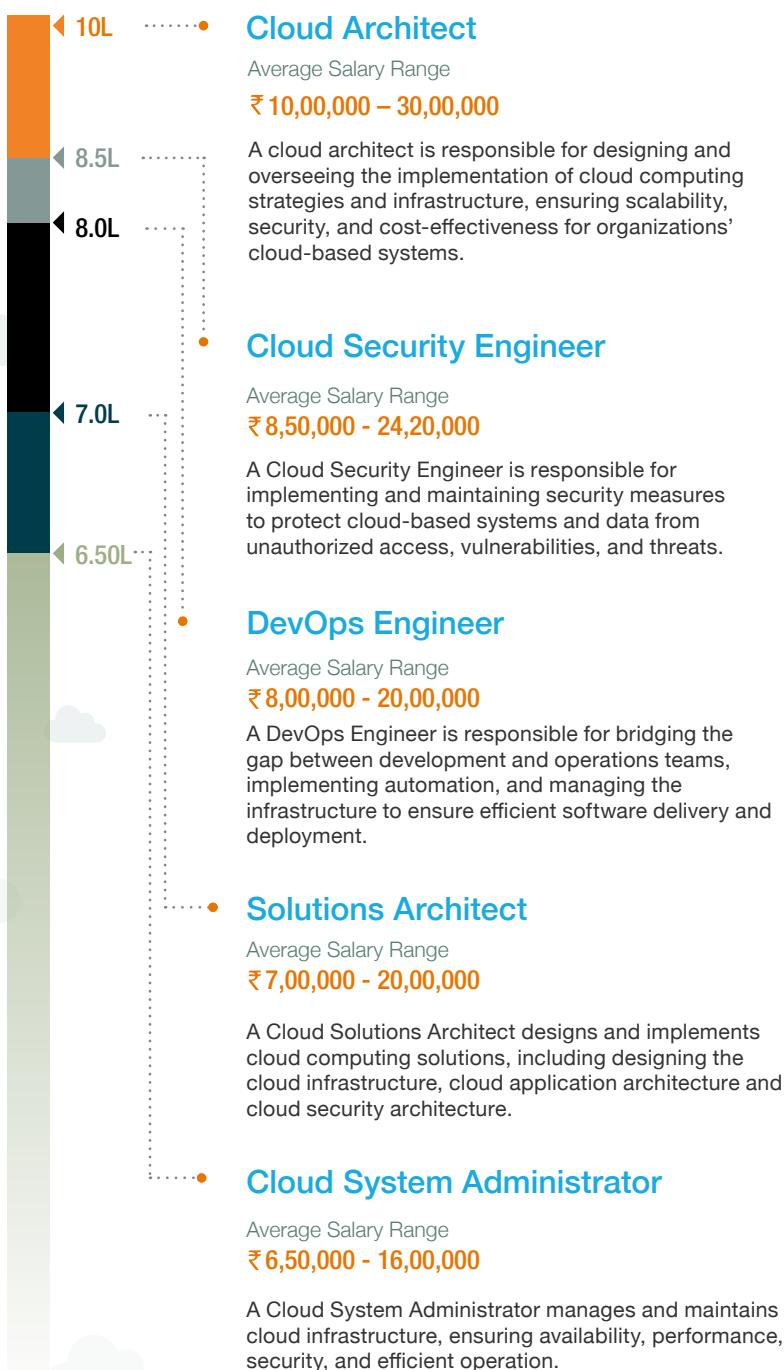
We have a team of dedicated admissions counselors here to help guide you in the application process and related matters. They are available to

They are available to:

- ✓ Address questions related to the application
- ✓ Assist with financial aid (if required)
- ✓ Help you better understand the program and answer your questions

Careers in Cloud Computing

Due to the high demand for cloud computing professionals, salaries in this field often reflect the market reality. Factors such as the company's size, geographical location, and industry can significantly influence compensation levels. Taking these variables into consideration, we have compiled an estimate of what you can expect to earn in the following roles:



Program Outcomes

At the end of this Post Graduate Program, you will:



Understand the main principles of Cloud Computing and how they have been implemented in Microsoft Azure and AWS



Implement AWS security and testing, and become an expert in AWS components such as S3, DynamoDB, Elastic Beanstalk, and CloudFormation



Design an Azure app service web app by using Azure CLI, Powershell, and other tools



Understand Google Virtual Machines and how to work with them



Manage subscriptions, billing, and role-based access control regarding Azure users and groups



Get an overview of AWS DMS, how the AWS Schema Conversion tool works, types of AWS Database Migration Service



Manage security and identity for Azure solutions



Select the appropriate AWS service based on data, compute, database, or security requirements



Implement use cases and configuration options for Azure App Services and App Service environments



Deploy, manage and operate scalable, highly available and fault-tolerant systems on AWS

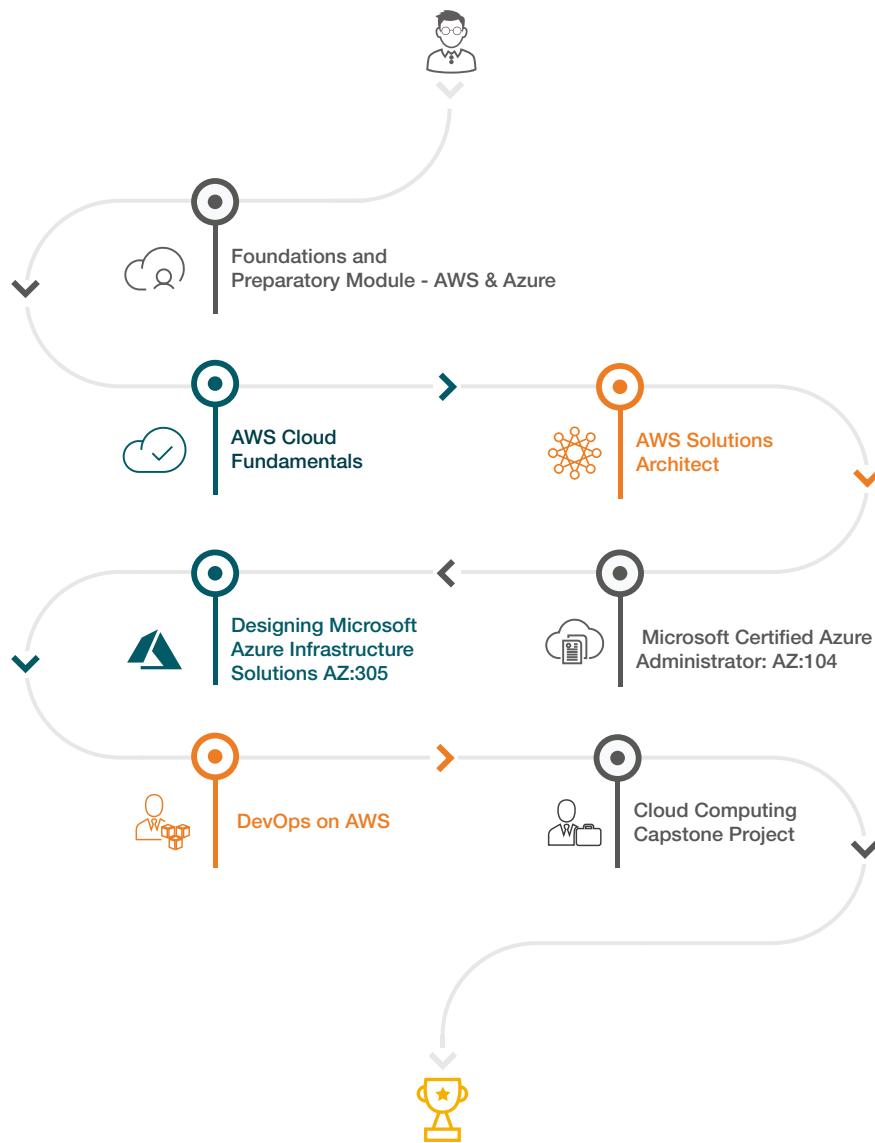
Who Should Enroll in this Program?



This program caters to those who are hoping to enter the world of Cloud Computing or want to update their skills, as it is designed and structured to accommodate various professional backgrounds. Although there are no prerequisites for taking this training program, individuals in the following roles and disciplines are ideal for this course:

- ✓ Fresh graduates who intend to take the plunge into the Cloud job market
- ✓ Professionals with any number of years of experience working in either technical or non-technical job roles and wish to build successful careers in the Cloud world
- ✓ People working in the following roles will benefit the most from the Post Graduate
 - ✓ Solutions architects
 - ✓ Programmers
 - ✓ Cloud developers
 - ✓ Cloud software engineers
 - ✓ DevOps professionals

Learning Path



Caltech CTME - Post Graduate Program in Cloud Computing Certificate

Electives

- Caltech CTME Cloud Computing Masterclass
- AWS SysOps Associate
- Google Cloud Platform Architect Training
- Big Data on AWS
- Cloud Security: CCSP
- DevOps on Azure
- Developing Solutions for Microsoft Azure
- AWS Developer Associate
- AWS Database Migration

Foundations and Preparatory Module - AWS & Azure

STEP

1

Attend this foundation course at your own pace to dive deep into the basics of AWS and Azure. This course will help you establish a strong foundation in AWS and Azure Cloud, which will serve as a benchmark for your upcoming courses. We strongly recommend that you complete each self-learning module in this course before attending their respective Live Classes.

2

3

Learning Outcomes

By the end of this AWS training, you will be able to:

4

- ✓ Learn the basics of AWS & Azure using comprehensive Self Learning Content
- ✓ Utilize this self-learning content as a foundational base to enhance your upcoming live class interactions. The knowledge you gain from these resources will serve as a stepping stone to deepen your understanding and actively engage in the discussions during the live sessions.

5

6

7

AWS Cloud Fundamentals

STEP

1

This module covers fundamental AWS concepts related to compute, database, storage, networking, monitoring and security. Throughout the course, you will learn how to build, compare and apply highly available, fault-tolerant, scalable and cost-effective cloud solutions.

2

Learning Outcomes

3

By the end of this AWS training, you will be able to:

4

- ✓ Describe terminology and concepts related to AWS services
- ✓ Navigate the AWS Management Console
- ✓ Articulate key AWS security measures and Identity and Access Management (IAM) concepts

5

✓ Distinguish between several AWS services, including Amazon Elastic Compute Cloud (Amazon EC2), AWS Lambda, Amazon Elastic Container Service (Amazon ECS), and Amazon Elastic Kubernetes Service (Amazon EKS)

6

✓ Understand AWS database and storage offerings, including Amazon Relational Database Service (Amazon RDS), Amazon DynamoDB, and Amazon Simple Storage Service (Amazon S3)

7

✓ Explore AWS networking services

✓ Access and configure Amazon CloudWatch monitoring features

Course curriculum

✓ Lesson 00 - Introduction to Amazon Web Services

✓ Lesson 01 - AWS Compute

✓ Lesson 02 - AWS Networking

✓ Lesson 03 - AWS Storage

✓ Lesson 04 - Databases

✓ Lesson 05 - Monitoring, Optimization and Serverless

AWS Solutions Architect

STEP

1

This AWS Solutions Architect Certification training will enable you to design, plan and scale AWS implementations utilizing over 70 cloud computing services. The course is aligned with the latest AWS exam and features Amazon-designated best practices.

2

Learning Outcomes

By the end of this AWS training, you will be able to:

3

- ✓ Formulate solution plans and guide AWS architecture best practices
- ✓ Design and deploy scalable, highly available, and fault-tolerant systems on AWS
- ✓ Perform the lift-and-shift of an existing on-premises application to AWS
- ✓ Decipher the ingress and egress of data to and from AWS
- ✓ Select the appropriate AWS service based on data, compute, database, network, or security requirements
- ✓ Estimate AWS costs and identify cost-control mechanisms

4

5

6

7

Course curriculum

- ✓ Lesson 00 - AWS Course Introduction
- ✓ Lesson 01 - AWS Core Concepts
- ✓ Lesson 02 - Compute and Related Features
- ✓ Lesson 03 - Storage Services
- ✓ Lesson 04 - VPC, Networking and Content Delivery
- ✓ Lesson 05 - Databases
- ✓ Lesson 06 - Security and IAM
- ✓ Lesson 07 - Serverless and Application Services
- ✓ Lesson 08 - Monitoring and Automation
- ✓ Lesson 09 - Container Service

Microsoft Certified Azure Administrator: AZ:104

STEP

1

This module covers how to manage Azure subscriptions, secure identities, administer the infrastructure, configure virtual networking, connect Azure and on-premises sites, manage network traffic, implement storage solutions, create and scale virtual machines, implement web apps and containers, backup and share data and monitor your solution.

2

3

Learning Outcomes

4

By the end of this Azure training, you will be able to:

5

6

7

- ✓ Manage subscriptions, billing, and role-based access control for Azure users and groups
- ✓ Utilize Azure Monitor to configure alerts and review the Azure Activity Log
- ✓ Deploy resources with ARM templates and organize Azure resources
- ✓ Implement, manage, and secure storage with shared access keys, Azure Cloud Backup, and Azure File Sync
- ✓ Store and access data using Azure Content Delivery Network and the Import/Export service

Course curriculum

- ✓ Lesson 01 - Manage Subscriptions and Governance
- ✓ Lesson 02 - Manage Role-Based Access Control (RBAC)
- ✓ Lesson 03 - Administer Identity
- ✓ Lesson 04 - Creating and Configuring Storage Accounts
- ✓ Lesson 05 - Configure Azure Files
- ✓ Lesson 06 - Configure Storage with Tools

- ✓ Lesson 07 - Administer Virtual Machine
- ✓ Lesson 08 - Create and Configure an App Service
- ✓ Lesson 09 - Create and Configure Azure Containers and Desired State Configuration
- ✓ Lesson 10 - Administer Virtual Networking
- ✓ Lesson 11 - Administer Intersite connectivity and network traffic
- ✓ Lesson 12 - Administer Data Protection and Monitoring

Designing Microsoft Azure Infrastructure Solutions: AZ:305

STEP

1

This module teaches Azure Solution Architects how to design infrastructure solutions. Course topics include governance, compute, application architecture, storage, data integration, authentication, networks, business continuity and migrations. The course combines lectures with hands-on projects to broaden your expertise with basic architectural design principles.

2

3

4

5

6

7

Learning Outcomes

By the end of this Azure training, you will be able to:

- ✓ Study and understand application architecture
- ✓ Learn about data integration
- ✓ Learn to demonstrate basic architectural design principles

Course curriculum

- ✓ Lesson 01 - Design a Governance Solution
- ✓ Lesson 02 - Design Authentication Solutions
- ✓ Lesson 03 - Design Authorization
- ✓ Lesson 04 - Logging and Monitoring Solution
- ✓ Lesson 05 - Design for High Availability
- ✓ Lesson 06 - Backup and Recovery Solution
- ✓ Lesson 07 - Non-Relational Data Solution
- ✓ Lesson 08 - Relational Data Solution
- ✓ Lesson 09 - Data Integration
- ✓ Lesson 10 - Compute Solution
- ✓ Lesson 11 - Design an Application Architecture
- ✓ Lesson 12 - Network Solution
- ✓ Lesson 13 - Migrations
- ✓ Lesson 14 - Cost Optimization

DevOps on AWS

STEP

1

The DevOps on AWS course will enhance your understanding of DevOps and AWS. Develop advanced skills in CodeBuild, CodeDeploy, and CodePipeline for continuous delivery and integration. Streamline development processes and deploy applications on AWS.

2

Learning Outcomes

After completing this DevOps on AWS course, you will be able to:

3

- ✓ Master core DevOps principles and practices
- ✓ Leverage AWS services to build and deploy applications
- ✓ Understand infrastructure as code using AWS CloudFormation
- ✓ Implement continuous integration and continuous delivery (CI/CD) automation
- ✓ Leverage AWS CodePipeline, CodeBuild, and CodeDeploy for application deployment
- ✓ Master monitoring and logging techniques for AWS applications
- ✓ Implement security and compliance practices for AWS DevOps
- ✓ Troubleshoot and debug AWS applications
- ✓ Get hands-on experience with real-world DevOps scenarios and projects on AWS

4

5

6

7

Course curriculum

- ✓ Lesson 01: Introduction to DevOps and AWS
- ✓ Lesson 02: AWS Services for DevOps
- ✓ Lesson 03: Infrastructure as Code with AWS CloudFormation
- ✓ Lesson 04: Continuous Integration and Continuous Delivery (CI/CD) with AWS CodePipeline and AWS CodeBuild
- ✓ Lesson 05: Application Deployment and Management with AWS CodeDeploy
- ✓ Lesson 06: Monitoring and Logging with AWS CloudWatch and AWS X-Ray

- ✓ Lesson 07: Security and Compliance in AWS DevOps
- ✓ Lesson 08: Troubleshooting and Debugging AWS Applications
- ✓ Lesson 09: AWS Automation and Orchestration with AWS Step Functions
- ✓ Lesson 10: AWS Serverless Architecture with AWS Lambda
- ✓ Lesson 11: Real-world DevOps Scenarios and Projects on AWS

Cloud Computing Capstone Project

STEP

1

This cloud computing capstone project will give you an opportunity to implement the skills you learned throughout this Cloud Computing program. Dedicated mentoring sessions will teach you how to solve real-world, industry-aligned cloud challenges.

2

Learning Outcomes

3

- ✓ Solve industry-specific problems through your choice of 8 capstone projects
- ✓ Showcase the skills you learned in the program
- ✓ Obtain a capstone evaluation from industry experts
- ✓ Exhibit problem-solving capabilities through your capstone project results

4

5

6

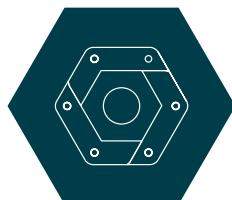
7

Elective Course



Caltech CTME Cloud Computing Masterclass

Attend online interactive masterclasses conducted by the instructor from the Caltech CTME and get insights about advancements in the cloud field and understand why it has become important for any organization to understand and leverage cloud computing skills to scale up.



Google Cloud Platform Architect

The Google Cloud Platform (GCP) Architect certification program will empower you with the skills needed to advance your career in cloud architecture and become a certified Google Professional Cloud Architect. The course covers IAM, networking, cloud storage, and much more.



Big Data on AWS

Big data on AWS involves leveraging AWS services and technologies, including Kinesis Analytics, to process, store, and analyze large volumes of data efficiently. This enables organizations to derive valuable insights and make data-driven decisions.



Cloud Security: CCSP

Develop the expertise to architect, operate, and secure data, applications, and infrastructure in the cloud using industry-leading best practices, policies, and procedures.



DevOps on Azure

The DevOps on Azure course will help you become a master of DevOps and Azure with expertise in several topics, including SRE and instrumentation strategy, security and compliance planning, Azure Service Fabric configuration, Azure Pipelines integration, and more. You will become proficient in both domains and ready for the certification exam upon completion.



Developing Solutions for Microsoft Azure

The Microsoft Certified Azure Developer Associate: AZ-204 course provides comprehensive training to become an expert Azure Developer. Gain proficiency in developing and deploying Azure solutions by leveraging Azure SDKs, APIs, and tools. Learn how to design and implement secure cloud applications and prepare for the AZ-204 certification exam.



AWS Developer Associate

Master AWS SysOps administration in this course. Learn how to deploy, manage, and operate scalable systems on AWS using tools like CloudFormation, Systems Manager, IAM, and Elastic Beanstalk. Prepare for the AWS SysOps Associate certification to advance your career.



AWS SysOps Associate

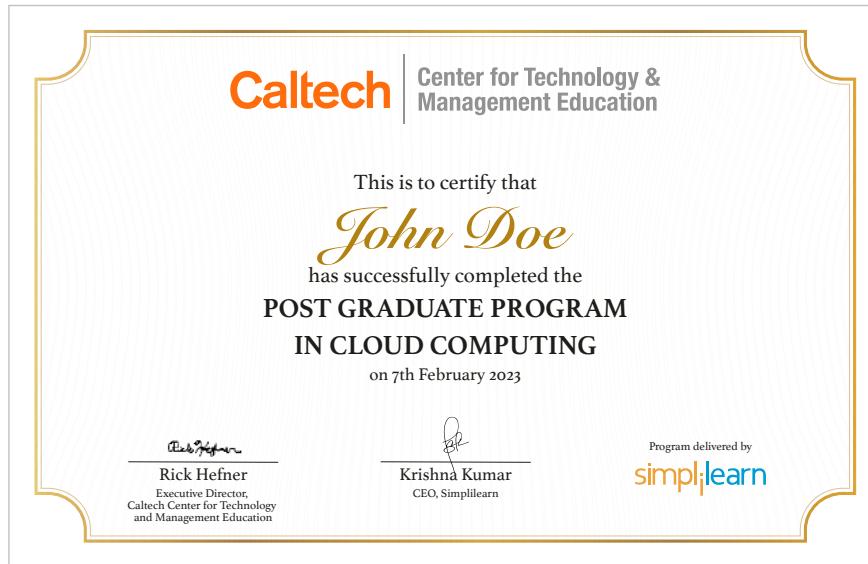
Master AWS SysOps administration in this course. Learn how to deploy, manage, and operate scalable systems on AWS using tools like CloudFormation, Systems Manager, IAM, and Elastic Beanstalk. Prepare for the AWS SysOps Associate certification to advance your career.



AWS Database Migration

Gain AWS data migration skills in this course. Learn how to migrate data using AWS Database Migration Service (DMS), AWS Glue, and AWS Snowball. Acquire hands-on experience in planning, executing, and managing data migration projects. Prepare for the AWS Data Migration certification exam.

Certificate



Upon completion of this Post Graduate Program in Cloud Computing, you will receive the Caltech CTME Post Graduate Certificate. You will also receive certificates from Simplilearn for each of the courses in the learning path. These certificates will testify to your skills as an expert in Cloud.

Advisory Board



Rick Hefner, Ph.D.

Program Director, Caltech Center for Technology & Management Education

rhefner@caltech.edu

Rick Hefner, PhD, specializes in systems development and maintenance; project management; Lean Six Sigma; process improvement, technology transfer; and risk management. His experience spans over 35 years. Dr. Hefner recently served as Director of Process Management at Northrop Grumman Corporation, where he managed corporate process initiatives related to Lean Six Sigma and program management.

Previous positions at Northrop Grumman (formerly TRW) included managing technology process initiatives and helping to establish the corporate engineering and program management processes. Previously, at Aerospace Corporation, Dr. Hefner was the Director of their Software Development department. He served as an engineer, technical specialist, project manager, and section manager.

Dr. Hefner has also worked with companies in the communications, electronics, and health sciences industries, including Applied Physics Laboratory, Ares Management, Boeing, DRS Technologies, Herbalife, Honeywell, Jet Propulsion Laboratory, John Deere, L-3 WESCAM, Maytag, Motorola, Pacific Bell, Raytheon, Schlumberger, Southern California Edison, St. Jude Medical, Toshiba, U.S. Navy, and Xerox. Dr. Hefner is credited with over 200 publications and presentations. He earned his PhD from the University of California, Los Angeles, in applied dynamic systems control. He received his MS and BS from Purdue University in interdisciplinary engineering.



simplilearn

USA

Simplilearn Americas, Inc.
201 Spear Street, Suite 1100, San Francisco, CA 94105
United States
Phone No: +1-844-532-7688

INDIA

Simplilearn Solutions Pvt Ltd.
53/1 C, Manoj Arcade, 24th Main, Harkunte
2nd Sector, HSR Layout
Bangalore - 560102
Call us at: 1800-212-7688

www.simplilearn.com

Disclaimer: All programs are offered on a non-credit basis and are not transferable to a degree.