Caltech | Center for Technology & Management Education

Post Graduate Program in
Cloud Computing

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About the Program

Accelerate your career with this acclaimed Post Graduate Program in Cloud Computing, in collaboration with Caltech CTME. This program features the perfect mix of theory, case studies, and extensive hands-on practice to master the architectural principles and services of the top Cloud platforms. You will learn to design and deploy highly scalable, fault-tolerant applications and develop skills to transform yourself into a Cloud professional.

This Post Graduate Program is designed for graduates in any discipline and experienced professionals from programming and non-programming backgrounds. The program is based on a Applied Learning approach that uses a combination of self-paced videos, live virtual classes, hands-on projects, and labs. Students also have access to mentorship sessions, providing a high-engagement learning experience and real-world applications to help master essential Cloud Computing skills.

At the end of this program, learners will understand the main principles of Cloud Computing and how they are implemented in Microsoft Azure, AWS, and Google Cloud Platform. This program will enable students to demonstrate their knowledge to implement use cases and configuration options for Azure App Services and AWS Application Services environments.

Those who complete the program will become certified Azure and AWS Cloud Architects.

Key Features of the Post Graduate Program in Cloud Computing in Collaboration with Caltech CTME

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

300+ Hours of Applied Learning

Online Convocation by Caltech CTME Program Director

50+ Hours of Self-Paced Learning Course Content

Physical Certificate from Caltech CTME (on request)

30+ Hands-On Projects with Integrated Labs

Caltech CTME Circle Membership

Capstone Project in 4 domains

About the Post Graduate Program in Cloud Computing in Collaboration with 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 faculty 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
- ✅ Caltech CTME Bonafide 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.

STEP 1

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.

STEP 2

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.

STEP 3

Admission

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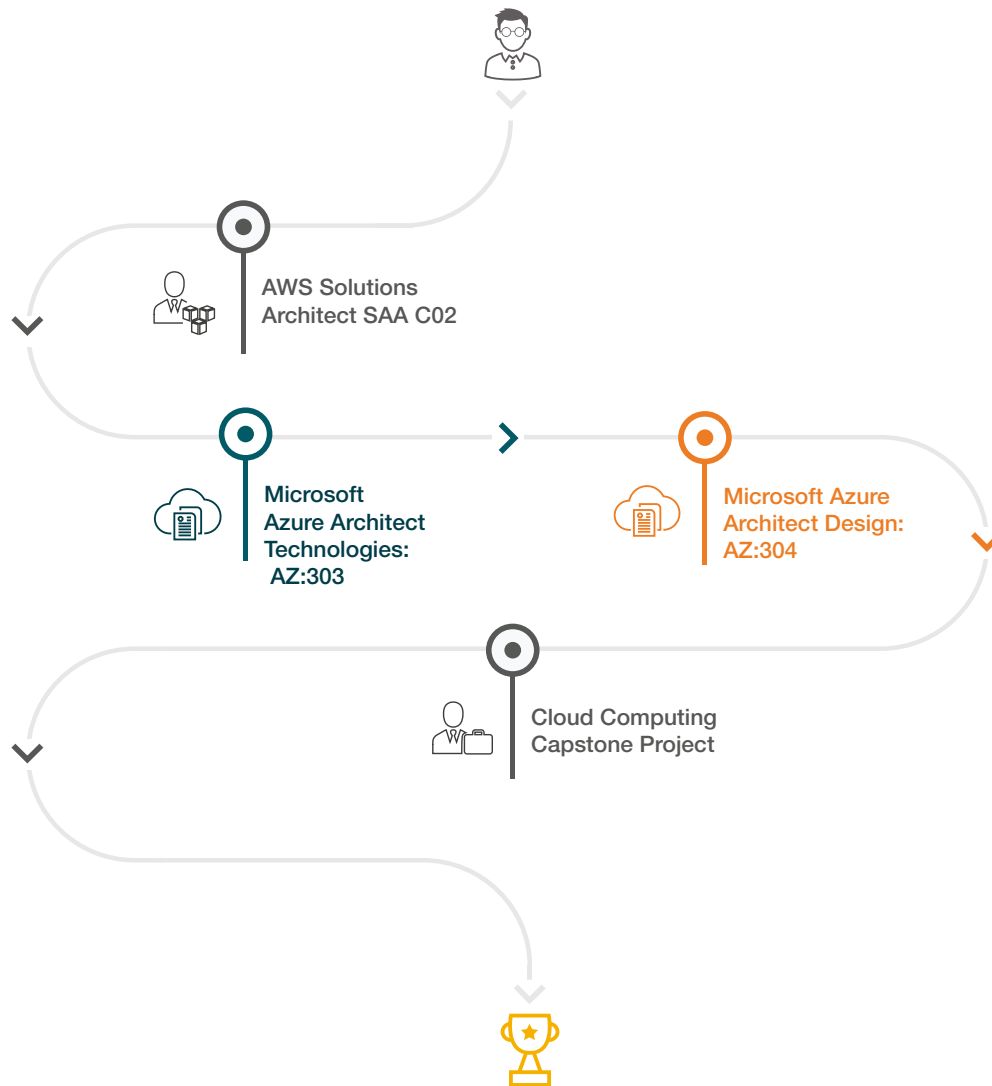
Talk to an Admissions Counselor

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

Learning Path

AWS Solutions
Architect SAA C02

Microsoft
Azure Architect
Technologies:
AZ:303

Microsoft Azure
Architect Design:
AZ:304

Cloud Computing
Capstone Project

✔ Academic Master Classes – *Caltech CTME*

Electives

✔ AWS SysOps Associate

✔ Microsoft Certified Azure Administrator:

AZ:104

✔ Microsoft Certified Azure Developer

Associate: AZ:204

✔ AWS Developer Associate

✔ AWS Database Migration

✔ Google Cloud Platform Architect Training

✔ Academic Master Classes – Caltech

CTME

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

Set up GCP account and utilize GCP services: networking, storage, content and delivery network

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

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

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

AWS Solutions Architect SAA C02

STEP

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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 featuring Amazon designated best practices.

Key Learning Objectives

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

- Formulate solution plans and provide guidance on AWS architecture best practices

- Design and deploy scalable, highly available, and fault-tolerant systems on AWS

- Identify 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, or security requirements

- Estimate AWS costs and identify cost control mechanisms

Course curriculum

- Lesson 00 - Course Overview

- Lesson 01 - AWS Overview

- Lesson 02 - Designing Highly Available, Cost-efficient, Fault-tolerant, and Scalable Systems

- Lesson 03 - Identity Access Management (IAM)

- Lesson 04 - Amazon Virtual Private Cloud (VPC)

- Lesson 05 - Elastic Compute Cloud (EC2)

- Lesson 06 - Amazon Simple Storage Service (S3)

- Lesson 07 - Amazon Route 53
- Lesson 08 - Databases
- Lesson 09 - Application Services
- Lesson 10 - Security Practices for Optimum Cloud Deployment
- Lesson 11 - Disaster Recovery
- Lesson 12 - Troubleshooting
- Lesson 13 - AWS Solutions Architect Exam

Microsoft Azure Architect Technologies: AZ:303

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The Microsoft Azure Architect Technologies AZ-303 online training course prepares you for a career as a certified Azure Cloud Solutions Architect. You will learn how to manage Azure resources, configure and deploy virtual machines, and master Azure Cognitive Services solutions as you become familiar with the Azure platform.

Key Learning Objectives

After completing this online Azure certification training course, you will be able to:

- ✓ Manage Azure subscriptions and resources
- ✓ Configure, deploy, and manage virtual machines and networks
- ✓ Evaluate and perform server migration to Azure
- ✓ Implement and manage advanced virtual networking and application services
- ✓ Manage and secure identities
- ✓ Select compute and storage solutions
- ✓ Perform hybrid networking
- ✓ Evaluate the throughput and structure of data access
- ✓ Create web applications using PaaS
- ✓ Create apps and services running on Service Fabric
- ✓ Use Azure Kubernetes Service for health monitoring and maintenance
- ✓ Develop long-running tasks and distributed transactions
- ✓ Configure a message-based integration architecture
- ✓ Develop for asynchronous processing and autoscaling
- ✓ Create Azure Cognitive Services solution

Course curriculum

Section 01: Course Introduction

- Lesson 01: Course Introduction

Section 02: Implement and Monitor an Azure Infrastructure

- Lesson 01: Implement Cloud Infrastructure Monitoring

- Lesson 02: Implement Storage Accounts

- Lesson 03: Implement VM's for Windows and Linux

- Lesson 04: Automate Deployment and Configuration of Resources

- Lesson 05: Implement Virtual Networking

- Lesson 06: Implement Azure Active Directory

- Lesson 07: Implement and Manage Hybrid Identities

Section 03: Implement Management and Security Solutions

- Lesson 01: Manage Workloads in Azure

- Lesson 02: Implement Load Balancing and Network Security

- Lesson 03: Implement and Manage Azure Governance Solutions

- Lesson 04: Manage Security for Applications

Section 04: Implement Solutions for Apps

- Lesson 01: Implement An Application Infrastructure

- Lesson 02: Implement Container based App

Section 05: Implement and Manage Data Platforms

- Lesson 01: Implement NoSQL Databases

- Lesson 02: Implement Azure SQL databases

Microsoft Azure Architect Design: AZ:304

STEP

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This Azure training course covers the more advanced activities on the Azure platform, such as managing Azure resources, configuring and deploying virtual machines and networks, mastering Azure AD, and securing data. You will also learn how to identify data storage options, integrate SaaS service on Azure, author deployments, and more.

Key Learning Objectives

After completing this online Azure certification training course, you will be able to:

- ✓ Manage security and identity for Azure solutions
- ✓ Integrate SaaS services available on the Azure platform
- ✓ Compare and analyze database options in Azure
- ✓ Monitor and automate Azure solutions
- ✓ Deploy resources with Azure Resource Manager
- ✓ Choose the correct backup option for infrastructure and data hosted in Azure
- ✓ Automate the deployment of future resources for backup recovery or scaling purposes
- ✓ Build Azure IaaS-Based Server Applications
- ✓ Deploy network infrastructure for use in Azure solutions
- ✓ Integrate Azure solution components using messaging service

Course curriculum

- ✓ Lesson 01: Course Introduction
- ✓ Lesson 02: Design Monitoring
- ✓ Lesson 03: Design Identity and Security
- ✓ Lesson 04: Design Data Storage
- ✓ Lesson 05: Design Business Continuity
- ✓ Lesson 06: Design Infrastructure

Capstone Project

STEP

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This Cloud Computing Capstone project will give you an opportunity to implement the skills you learned throughout this program. Through dedicated mentoring sessions, you'll learn how to solve a real-world, industry-aligned Cloud problem. The project is the final step in the learning path and will enable you to showcase your expertise in Cloud Computing to future employers.

Elective Course

Academic Master Classes
– *Caltech CTME*

Attend online interactive Master Classes conducted by the instructor from the Caltech CTME and get insights about advancements in the Cloud domain and understand why it has become important for any organization to understand and implement Cloud Computing skills to scale up.

Microsoft Certified Azure Administrator: AZ:104

Simplilearn's Azure Administrator training provides you with a deep understanding of the entire administrative lifecycle in Azure environment. This Azure course shows you how to maintain services related to computing, storage, network, and security. Enhance your Azure Administrator skills and prepare to ace the AZ-104 Azure Administrator exam.

Microsoft Certified Azure Developer Associate: AZ:204

This Azure Developer Certification training aligns with the latest (2020) edition of Azure Developer Certified Associate exam AZ-204. AZ-204 is the updated version of the existing exam for the Microsoft Azure Developer Associate: AZ-203. This exam verifies your ability to select, develop, and implement Azure Cloud technology solutions.
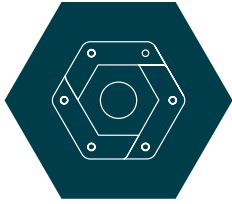
AWS Developer Associate

Simplilearn's AWS Developer Associate training builds upon the skills learned from the AWS Technical Essentials course. This course will teach you how to write code and design scalable applications, implement application security and testing, and develop expertise with key AWS components such as S3, DynamoDB, Elastic Beanstalk, and CloudFormation.

AWS Sysops Associate

This AWS SysOps training is a prerequisite to the DevOps Engineer Certification. You will learn how to migrate on-premise applications to AWS, control the flow of data to and from AWS, master the AWS management console, implement operational cost controls, and enhances your ability to leverage AWS resources and services efficiently.

AWS Database Migration

This course will demonstrate the key functionality of AWS Database Migration Service (DMS) and will help you understand how to easily and securely move databases into the AWS Cloud platform to take advantage of the cost savings and scalability of AWS.
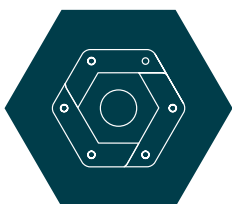
Google Cloud Platform Architect Training

Simplilearn's Google Cloud Platform Architect certification program will aid you with the skills needed to advance your career in Cloud architecture and become a certified Google Cloud Architect Professional. The course covers IAM, Networking, Cloud Storage, and much more. This online GCP Architect certification course introduces you to the comprehensive and flexible infrastructure and platform services provided by Google Cloud Platform. You will learn to analyze and deploy infrastructure components, such as networks, storage systems, and application services.

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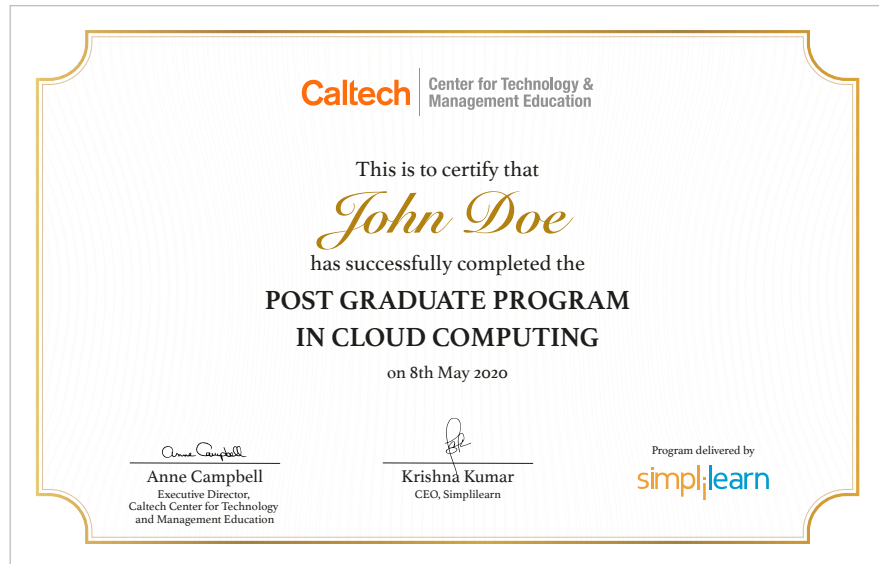
Upon completion of this Post Graduate Program in Cloud Computing, you will receive the Caltech CTME Post Graduate Certificate. You will also receive certificates from Simplilearn for each of the courses in the learning path. These certificates will testify to your skills as an expert in Cloud.

Advisory Board Members

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.

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