# ADVANCED CERTIFICATE PROGRAMME IN

# CLOUD COMPUTING

Simple | Smart | Speed

CHOOLS

JG UNIVERSITY

EXCELLENCE BY CHOICE

# Program Highlights

## Advanced Certificate Program from Chools & JG University

Differentiate yourself from your peers by earning the industry recognised Advanced Certificate Program from Chools & JG University.

## For the Industry, by the Industry

Learn and apply concepts on industry projects along with personalised industry mentorship.

## 360 Degree Career Assistancet

Receive 360 degree career support from access to chools job opportunities portal, 1:1 profile reviews, career mentorship from industry experts and much more.

## Personalised Mentorship

Get unparalleled personalised mentorship and doubt resolution from Chools & JG faculty and our panel of industry experts.

## Unparalleled Learning Experience

Learn the concepts from experienced Chools faculty & understand the applications from Industry experts to get a blend of theoretical knowledge and practical-hands on experience.

# Learning Experience

## Industry-relevant Curriculum

Designed and taught by best in class industry experts and Chools & JG University faculty.

## Discussion Forums

Learn from your peers and teaching assistants, and for timely doubt resolution.

## Re-learn the Concepts

Get program access for upto 3 years to refresh your concepts.

## Blended Learning

Learn with the ease and flexibility of recorded sessions as well as live sessions, designed to ensure a wholesome learning experience.

## Career Assistance

Access to upGrad's job opportunities portal, career mentorship, profile review and more.

## Hands-On Projects

Multiple case studies & assignments & a mini capstone project to choose from and apply learnings to it.

# Industry Projects

## Databases

Use the Java API provided by a SQL & a NoSQL database and integrate them in your Java application.

## Building Applications Microservices

Take a service based approach and develop an cloud-native application using Microservices.

## Application Deployment

Make use of the deployment tools and deploy your application to cloud.

## Capstone Project

Take a real world use-case and design, develop & deploy an cloud-native solution.

# Program Curriculum

## PREPARATORY COURSE

## FUNDAMENTALS OF PROGRAMMING LANGUAGE WITH BASIC DATA STRUCTURES (JAVA)

Learning the fundamentals of Java and its basic building blocks. Start with writing basic Java programs. Also explore arrays & array lists.

## C1. DISTRIBUTED SYSTEMS & CLOUD DATABASES

### INTRODUCTION TO DISTRIBUTED SYSTEMS

Understand the notion of Distributed Systems and learn about the various intricacies of Distributed Systems

### INTRODUCTION TO CLOUD (USING AWS)

Get introduced to the cloud and learn about various cloud services, and there use cases.Understand the concept of virtualisation. Learn about the various intricacies involved in provisioning compute and storage resource on the cloud

### SQL AND RELATIONAL DATABASE MANGEMENT SYSTEMS

Get introduced the Relational Database Management System and learn about the techniques to module relational databases. Use SQL to perform various DML and DDL queries on the relational database

## HANDS-ON WITH NOSQL - MONGODB

Understand the notion of NoSQL Database, take a hands-on approach and learn to model and query using MongoDB

## COURSE PROJECT

Use the concept learnt so far and work on a industry grade project

# C2. DESIGN & DEVELOPENT OF MICROSERVICES

## INTRODUCTION TO DISTRIBUTED SYSTEMS

Get introduced to Spring boot framework and learn to develop a hello world web-application using Spring-Boot framework

## DATA ACCESS LAYER & SERVICE LAYER

Take a hands-on approach and learn about how to build data and service layer in your application

## INTRODUCTION TO BACKEND ARCHITECTURE - MONOLITHIC & SERVICE ORIENTED ARCHITECTURE

Get introduced to web application the various types of software backend architectures and learn about their use-cases and challenges

## INTRODUCTION TO MICROSERVICES; DESIGNING APPLICATIONS USING MICROSERVICES[HLD]

Learn about Microservicies and the use cases and challenges of the Microservices based architecture.

## INTRODUCTION TO REST & CONTROLLER LAYER

Get introduced to REST and understand its various intricacies to develop REST APIs

## AOP - ASPECT ORIENTED PROGRAMMING & APPLICATION SECURITY

Get introduced to Aspect-Oriented Programming. Learn about the various concepts of exception handling and application security

## DISCOVERY OF MICROSERVICES & COMMUNICATION AMONG MICROSERVICES

Learn and implement various microservices communication techniques

## NON-BLOCKING APPLICATION(MESSENING QUEUES) - KAFKA

Understand the need for messaging services and learn to integrate them into your application

## COURSE PROJECT

Use the concept learnt so far and work on a industry grade project

# C3. SERVERLESS DEVELOPMENT AND DEPLOYMENT OF CLOUD-NATIVE

## INTRODUCTION TO LAMBDA/SERVERLESS ARCHITECTURE + SERVERLESS DEVELOPMENT

Get introduced to serverless architecture and understand its pros-cons and indusry use-case Learn to develop services using the serverless approach

## WEB APPLICATION OPTIMISATION

Understand and implement various application optimisation techniques commonly used in the industry

## MICROSERVCIES - DEBUGGING AND TRUOBLE SHOOTING

Learn and apply various strategies to debug a microservice-based application

## INTRODUCTION TO SPRING CLOUD AND DEPLOYMENT

Get introduced to Spring Cloud and learn to deploy microservices-based applications using Spring Cloud

## CONTAINERS VS. VMS. RESOURCE EFFICIENCY. DOCKERS AS CASE STUDY

Understand the notion of containers and their use cases. Learn about Docker and create Docker images of your application

## CONCEPTS OF CLOUD DEPLOYMENT & DEPLYOMENT USING KUBERNETES & SERVERLESS DEPLOYMENT

Understanding the various intricacies involved in deploying a application in cloud
Learn to deploy a microservice-based application on Kubernetes.
Learn to deploy a serverless application on the Cloud

## DEPLOYING WEB APPLICATIONS WITH AWS ELASTIC BEANSTALK (OPTIONAL)

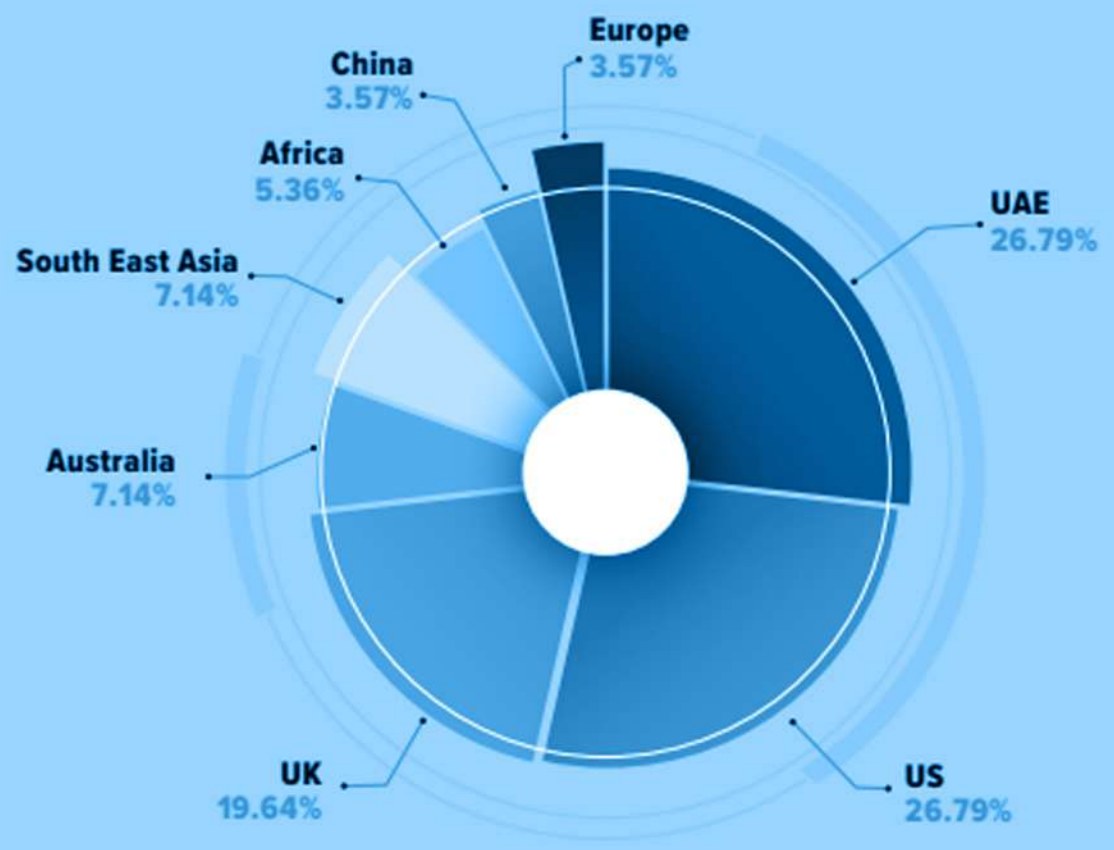
Learn about AWS BeanStack and deploy a web application using BeanStack

## COURSE PROJECT

Deploying an application on the Cloud

# Meet the Class


## Opportunity to network with our international learners



# Program Details & Admission Process

## PROGRAM DURATION AND FORMAT

7.5 months | Online

## PROGRAM FEE

INR 99,000 (Incl. of all taxes)

## PROGRAM START DATES

Please refer to the website for program start dates.

## ELIGIBILITY

Bachelor's Degree with 50% or equivalent passing marks. No coding experience required.

## WEEKLY COMMITMENT (12-15 hours/week)

6-7 HOURS
Asynchronous learning time.

6-7 HOURS
Assignments and projects.

## SELECTION PROCESS

**STEP 1: Selection Test**

Fill out an application and take a short 20-minute online test with questions

**STEP 2: Review and Shortlisting of Suitable Candidates**

Our faculty will review all applications, consider the educational and professional background of an applicant and review the test scores wherever applicable. Following this, offer letters will be rolled out so you are assured a great peer group to learn and network with.

**STEP 3: Enrollment for Access to Prep Content**

Make a quick block payment & receive immediate access to the prep content and begin your upGrad journey.
(Loan assistance available if required)