

SYLLABUS  
PART I  
EDISON STATE COMMUNITY COLLEGE  
CIS 217S CLOUD ADMINISTRATION  
3 CREDIT HOURS

**COURSE DESCRIPTION**

Comprehensive study of cloud administration with an emphasis on installing, configuring, managing, maintaining, monitoring, securing, and troubleshooting virtual cloud-based infrastructure. Students will maintain an emphasis on operational efficiency, cost effectiveness, reliability, performance, security, and sustainability. Prepares students for the AWS Cloud Solutions Architect and CompTIA Cloud+ certifications exams. Prerequisite: CIS 211S and CIS 214S. Lab fee.

**COURSE GOALS**

The student will:

Bloom's Level		Program Outcomes
2	1. Explain cloud service models (IaaS, PaaS, SaaS, and FaaS) and their applications.	1, 3
2	2. Explain cloud-native design concepts and their benefits for scalable architectures.	1, 3
3	3. Configure virtual private clouds (VPCs) and connect on-premise environments to the cloud.	4, 6
4	4. Analyze cloud networking concepts and troubleshoot connectivity issues.	4, 6
5	5. Evaluate storage solutions and implement tiered storage in cloud environments.	4, 6, 8
3	6. Implement virtualization strategies, including virtual machines, containerization, and serverless solutions.	4, 6, 8
5	7. Design and apply disaster recovery and business continuity strategies in cloud environments.	1, 4, 6
5	8. Create security policies and identity management solutions to safeguard cloud data.	1, 4, 6, 8
5	9. Assess cloud performance and monitoring solutions to maintain optimal service availability.	6
4	10. Troubleshoot cloud deployments and migration issues, including resource limitations and misconfigurations.	6
2	11. Explain DevOps tools and methodologies for continuous integration and delivery in cloud environments.	4, 6
5	12. Develop automated solutions for cloud environments using infrastructure-as-code (IaC).	4, 6

**CORE VALUES**

The core values are a set of principles that guide Edison State Community College in creating its educational programs and environment. They will be reflected in every aspect of the College. Students' educational experiences will incorporate the core values at all levels, so that a student who completes a degree program at Edison State Community College will not only have been introduced to each value but will have had them reinforced and refined at every opportunity.

**TOPIC OUTLINE**

1. Introducing Cloud Administration

2. Adding a Storage Layer
3. Adding a Compute Layer
4. Adding a Database Layer
5. Creating a Networking Environment
6. Connecting Networks
7. Securing User and Application Access
8. Implementing Elasticity, High Availability, and Monitoring
9. Automating an Architecture with DevOps tools and CI/CD Pipelines
10. Caching Content
11. Building Decoupled Architectures
12. Building Microservices and Serverless Architectures
13. Planning for Disaster
14. Troubleshooting Cloud Deployments